

# Quantitative materiality disclosure and the impact on investor decision making and perceptions of audit quality

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# ABSTRACT

For publically listed New Zealand (NZ) companies with a balance date post-December 2016, the disclosure of Key Audit Matters will become mandatory. This requirement, aimed at enhancing the information value of audit reports, is a direct response to the recent Global Financial Crisis. Further, many auditors and market participants have voluntarily expanded these requirements and include a materiality threshold disclosure. Despite the significant response from regulators, little research has been conducted which explores the possible impacts of this enhanced materiality disclosure.

This quantitative research, using an experiment based research design, aims to investigate whether the disclosure of materiality thresholds will have an impact on both the decisions of non-professional investors and their perceived quality of the audit.

The results of this study suggest that with a large (ten percent) materiality threshold disclosure, non-professional investors will reduce their equity based investment, in favour of risk-free NZ Government Bonds. Alternatively, non-professional investors perceive no change in the quality of audit following small (five percent) or large materiality threshold disclosure, due to lack of statistical significance.

Overall, this research tentatively supports the public disclosure of materiality thresholds, noting that additional longitudinal studies are required.

*Keywords: materiality threshold disclosure, audit quality, audit report*

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# 1. INTRODUCTION

## 1.1 Background

*“Where were the auditors, the guardians and  
gatekeepers, the professionals we should be able to  
trust?”*

Cooper and Grose (2010, p. 19)

Following the Global Financial Crises (GFC) of 2008-2009, the public were questioning the extent of what had happened, and more importantly, why? Cooper and Grose (2010) asked this question of auditors. What role they had played in the collapse of world markets, and what was going to be done to solve the problem. Specifically, Cooper and Grose (2010) considered whether the world would see another “implosion of an international accounting firm” (p. 163). For many, this postulation brings back memories of the collapse of Arthur Andersen, not eight years earlier.

Consequentially, regulated changes to the auditing profession are now being implemented. International regulators have been looking at ways to better audit quality and to improve the audit report (IAASB, 2011; PCAOB, 2011). Industry participants have actively been engaging in this drive for change (Deloitte, 2016; KPMG, 2016; PWC, 2015). Additionally, The New Zealand Financial Markets Authority (FMA), with greater powers under the newly enacted Financial Markets Conduct Act (2013) and the Auditor Regulation Act (2011), now release reports every six months regarding their reviews of audit quality of New Zealand listed entity audits.

In the wake of the GFC, there have been sporadic changes to improve audit quality. Regulators have been investigating the additional disclosure of materiality (and materiality

thresholds) within the audit report (IAASB, 2011; PCAOB, 2011). This is likely derived from the belief that “good materiality judgements [are] crucial to an effective audit” (McKee & Eilifsen, 2000, p. 8). Further, audit risk (the foundation of the current risk-based audit approach) cannot be considered without reference to materiality (McKee & Eilifsen, 2000). Therefore it can be understood why regulators would want to disclose materiality to users, assisting in their risk-based assessment of an entity’s annual result.

In 2013, the United States (US) Public Company Accounting Oversight Board (PCAOB) proposed the idea of disclosing ‘Key Audit Matters’ in the standard audit report. By January 2015, the International Standard on Auditing (*ISA*) 701: *Communicating key audit matters in the independent auditors report* and *ISA* 700 (*revised*): *Forming an opinion and reporting on financial statements*, had been approved by the International Auditing and Assurance Standards Board (IAASB)<sup>1</sup> (IAASB(b), 2015). These new standards, along with a raft of other changes to auditing standards, would apply to audits that started on or after 15 December 2016. One of the primary objectives of these changes was to increase audit quality (IAASB(b), 2015). From a New Zealand standpoint, the External Reporting Board (XRB) has adopted the New Zealand (NZ) equivalents to *ISA* 700 and *ISA* 701. These require the reporting of Key Audit Matters, including additional descriptive information regarding materiality (*ISA* (NZ) 700(Revised), 2015 - Section 38(c)).

While New Zealand auditors and companies are preparing for the disclosure of Key Audit Matters (and the additional disclosures around materiality), some overseas companies are already adopting. The Vodafone Group in the United Kingdom (UK) are already disclosing the new ‘enhanced audit report’ in their 2014/ 2015 annual report (Vodafone Group Plc, 2015). Specifically, Vodafone presents the dollar value of planning materiality, along with its

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<sup>1</sup> Part of the International Federation of Accountants (IFAC)

basis for determination. New Zealand companies have recently followed suit, where recently, the Contact Energy audit report has disclosed, similar to Vodafone Group, the dollar value of materiality and its basis of determination (Contact Energy, 2017).

## 1.2 Research Problem

Gray, Turner, Coram, and Mock (2011) in their stakeholder discussions identify a consensus among some stakeholders. Specifically, they identified that a simple stamp from auditors which said 'ok' would be a sufficient substitute for the current unqualified audit report (p. 673). Mock, Turner, Gray, and Coram (2009) suggests that not all user's read the audit report and that most glance to see if the opinion is qualified and signed off by a 'Big N' auditor.

Therefore, there is concern over what use and additional value, increasing audit report disclosures would bring. From an academic view, there are scant research articles that explore the impact of disclosing materiality (or materiality thresholds). Furthermore, and despite the lack of prior research, regulators are pushing forward with further audit report disclosures, such as Key Audit Matters (ISA (NZ) 701, 2015).

Therefore the aim of this thesis is to investigate what effect the disclosure of materiality thresholds will have on the decisions of audit report users (specifically, non-professional investors). It will focus on the following point:

1. Will investment decisions of non-professional investors change as a result of materiality threshold disclosure in the audit report?

Furthermore, with increasing materiality disclosure, financial statement users may identify this as auditors passing on responsibility (R. Fisher, 1993). Alternatively, they may perceive the audit report as providing less assurance. Therefore, the following point is also considered:



2. Will stakeholders perceive materiality threshold disclosure as reducing the quality of the audit opinion?

This study does not investigate the effect of a definition or description of materiality disclosure. Instead, it focuses on the disclosure of a materiality threshold which is currently being presented by many market participants (refer to chapter 1.1).

Regardless, with a lack of prior research and with the regulators focused on pushing through audit report disclosure changes, findings from this study will help in identifying any potential benefits or issue. Further, this study will assist in identifying whether public materiality threshold disclosure is appropriate.

### 1.3 Research Design

This study uses the neoclassical theory of investor risk preference to derive the hypotheses. To test these hypotheses, an experimental design has been developed which uses non-professional investors (proxied by undergraduate students) as research participants. The aim is to assess how changes in materiality threshold disclosure will change investor decisions and perceptions of audit quality. The research design seeks to determine whether statistically significant effects, based on ANOVA and bivariate T-tests, are present. The results will form a stable foundation for further study, along with identifying potential benefits or issues with public materiality threshold disclosure.

## 2. LIMITATIONS

The limitations are identified and discussed in detail within the study. However in summary:

This study has incorporated sample sizes of 15-17 (49 in total) participants per cell. While this is an appropriate size to draw reasonable conclusions, future studies would benefit from using larger sample sizes.

The participants used are undergraduate students from the University of Canterbury. While substantial research has been identified which supports the use of undergraduate students, along with significant consideration of the research design, the use of undergraduate students as non-professional investors has limitations. This is reflected in experience and knowledge of investing, company analysis, risk preferences, and understanding of audit report information. While several checks in this study identify that these are not significant issues, it may limit the conclusions drawn.

While every effort was made to create realism, the participant investment was distributed during classes and participants knew the purpose of the experiment was for academic research. Furthermore, a hypothetical company (which included extracts of financial information and audit report) and investment decision was formulated for participants. On this basis, there is a general limitation that the study does not have sufficient realism. However, this is mitigated by statistical validity and reliability tests performed (refer to chapter 7).

Due to these limitations, this study will lack some external validity and therefore limit the generalisation of the findings to the population.

While this research is bound in the theory of the rational investor (refer to chapter 5), all investors in practice will have slightly different risk profiles, perceptions, and investment

strategies. For instance, some investors may only choose sustainable investments for their portfolios, having limitations on the results obtained. However, this variance in investor profiles means that any research of investor decisions will have problems in projecting results to all investors.

This study has utilised materiality at the five percent and ten percent intervals of net profit before tax. While substantial prior research supports the use of these benchmarks (refer to chapter 6.3.4), it is likely that large listed entities would not have materiality benchmarks which are as high as ten percent. This is supported by anecdotal evidence, based on discussions with various professional auditors over the duration of this research, where they noted that the materiality benchmarks for listed entities are not this high. Notwithstanding, this thesis is based on a substantial amount of prior research (not necessarily relating to audit materiality threshold disclosure), and larger materiality values would still be possible for non-listed entities, which are the next target for materiality threshold disclosure (i.e. from 15 December 2018 (ISA (NZ) 701, 2015)).

Lastly, there are certain assumptions within this study on which the conclusions are drawn. For instance, participants are assumed to have basic knowledge of the key accounting and auditing terms such as profit, assets, and audit report. Further, participants are assumed to have an understanding of the role and function of the capital markets. Several narrations are included in the experiment design to explain some of these key terms within this study, along with the students used mainly having a commerce as their Bachelor. However, a basic understanding of these particular assumptions is required to ensure appropriate and valid conclusions are drawn.

### **3. MOTIVATION OF THE RESEARCH**

#### **3.1 A New Long Form Audit Report**

The audit report has changed significantly over the decades, from being a mere certificate (Church, Davis, & McCracken, 2008) to long form audit reports (R. Fisher, 1993). The recent inclusion of the Key Audit Matters (ISA (NZ) 701, 2015), including addition materiality disclosures, is another path on the road of enhancing the value the audit provides. However, with all new initiatives, this provides a need for academic research to investigate and verify whether the suggested benefits are as anticipated by regulators and standard setters.

#### **3.2 Lack of Prior Research**

In the wake of the GFC, regulators made swift and significant changes to the standard audit report, including the new requirements to disclose Key Audit Matters. Researchers have been slow to react, and there is a small amount of research before the GFC. This has resulted in limited research being available to inform regulators, standard setters, and practitioners (Davis, 2007; Doxey, 2013; M. Fisher, 1990; Gutierrez, Minutti-Meza, Tatum, & Vulcheva, 2015; Ruhnke, Pronobis, & Michel, 2014). (Davis, 2007; Doxey, 2013; M. Fisher, 1990). Davis (2007) and M. Fisher (1990) both use proxy investors in an experimental market setting to examine market efficiency, following the disclosure of materiality thresholds. Importantly, both find increased market efficiency through materiality threshold disclosure. Doxey (2013) expands on this by examining materiality threshold disclosure in light of an anchoring effect and subsequent effects on audit quality and perceptions on litigation. Further, Ruhnke et al. (2014) explores the impact of materiality threshold disclosure on credit lending decisions.

Due to the limited number of studies and varying focus points, additional studies are needed to reveal the likely impact of materiality threshold disclosure on investment decisions of non-professional investors and their perceptions of audit quality (i.e. the two aims of this study). Furthermore, several prior studies (both relating to materiality threshold disclosure and not) have suggested further study in this area (Doxey, 2013; Gray et al., 2011; Houghton, Jubb, & Kend, 2011; Vanstraelen, Schelleman, Hofmann, & Meuwissen, 2011).

### 3.3 Market Participants' Voluntary Disclosure

As stated in chapter 3.2, regulators made swift action following the GFC. The result is that despite the lack of prior research, and despite various studies identifying potential problems with additional audit report disclosures (refer to chapter 4.9), the regulations relating to the disclosure of Key Audit Matters have been settled and adopted (ISA (NZ) 701, 2015).

Subsequently, market participants have acted to also incorporate the disclosure of materiality thresholds as part of their revised audit reports. Therefore, with the adoption of ISA (NZ) 701 occurring for NZX listed entities who balance date is post-December 2016, and with market participants pressing forward with their own voluntary disclosure of materiality thresholds, further research is desperately needed to examine any potential impacts.

### 3.4 Audit Expectations Gap

There is a significant array of academic research on the audit expectations gap debate (Hojskov, 1998; Houghton et al., 2011; Humphrey, Moizer, & Turley, 1993; McEnroe & Martens, 2001; Monroe & Woodliff, 1993; Porter, 1993; Sikka, Puxty, Willmott, & Cooper, 1998). Specifically, the audit expectations gap deals with the differences in perceptions of

auditor duties and responsibilities, and related disclosures provided in audit reports, by the public (Monroe & Woodliff, 1993). This is an age-old area of auditing research and one that is unlikely to be resolved soon. This study will aid the debate by investigating the effect of additional audit report disclosures, being the materiality threshold disclosure, on investing decisions and perceptions of audit quality. Further, this study will assess how these investing decisions and audit quality perceptions may impact the audit expectations gap.

## **4. LITERATURE REVIEW**

### **4.1 Introduction**

First, this literature review explores the history of audit reports, from its humble beginnings to the current long form audit reports and Key Audit Matter disclosures. Second, I explore how materiality is determined by regulators and practitioners, along with a practical view of materiality threshold disclosure in publically listed audit reports. Third, I examine the audit expectations gap with regard to auditors' and users' materiality perceptions. Fourth, I assess both the benefits and disadvantages of public disclosure of materiality thresholds. Lastly, I review the limited prior research on audit materiality threshold disclosure.

### **4.2 History of the Audit Report**

Like many business innovations, the audit report began with humble beginnings. Church et al., (2008, p. 2) explain how the audit report in the UK first started off as a certificate and was not standardised. Ultimately, this meant that there could be as many types of 'certificates' as there were auditors who prepared them. This had profound implications regarding comparability and understandability.

From a US setting, following the stock market crash of 1929, incremental improvements were made, and by 1934 a standardised report was in use (Church et al., 2008). In 1992 (following the 1987 'Black Monday' stock market crash (Carlson, 2007)) an international based exposure draft was released proposing a move to a long form audit report (R. Fisher, 1993). By 2009, ISA 700 (2009) was approved by the ISAAB which dictated a set of guidelines (with support from other ISA's) for audit report disclosures. Despite these incremental changes, the audit report was still considered by many to be a pass/fail type

report on the back of boilerplate language (Church et al., 2008). Further, it is clear that audit reporting changes were derived only from external shocks to the global stock markets, rather than pre-emptive action from the auditing profession.

Moving through 2008-2009 (where the GFC was still active), the public was searching for someone to blame, and it was only a matter of time before they set their sights on auditors. On the back of this, many researchers were focused on enhancing the communicative value of the auditor's report (Church et al., 2008; Manson & Zaman, 2001; Turner, 2003). Further, regulators saw the need for a more radical change, departing from evolutionary wording changes to more revolutionary 'Key Audit Matter' reporting. From this, the IAASB approved a raft of new and revised standards including a major revision to ISA 700 (ISA 700, 2009). The revolutionary change resulted in an 'enhanced audit report' which required the disclosure of Key Audit Matters (in accordance with ISA (NZ) 701 (2015)) including, among other things, an increase in materiality definitions and descriptions (section 38(c)). This was to be effective for reporting periods on or after 15 December 2016 ((ISA (NZ) 700(Revised), 2015). However, individual jurisdictions have frequently allowed for transition periods, such as the two-year transition period for New Zealand listed entities, aimed at ensuring audit quality is maintained (XRB, 2015).

#### 4.3 Determining Materiality - Regulation

The Financial Accounting Standards Board (FASB), the accounting standard-setting body in the US, defines materiality. An "omission or misstatement of an item is material in a financial report, if, in light of surrounding circumstances, the magnitude of the item is such that it is probable that the judgement of a reasonable person relying upon the report would have changed" (FASB, 1980). This is consistent with the New Zealand Equivalent to ISA 320's,



(ISA (NZ) 320, 2011) definition. The Securities and Exchange Commission (SEC) amend the term ‘user’ in their definition of materiality and replace it with the term ‘average prudent investor’ (SEC, 1999). This is done to reflect the nature of their business as a financial market regulator. Regardless, the fundamental definition of materiality has remained constant with the view that that materiality judgements are to be made in light of the target audience.

ISA (NZ) 320 (2011) is the primary (New Zealand equivalent) audit standard currently applicable which dictates basic guidelines of what materiality is (as above) and how it should be determined. Specifically, materiality must be formed in light of surrounding circumstances, along with incorporating both quantitative and qualitative characteristics in the final number used. Furthermore, it is to be ‘determined’ by auditors as opposed to being ‘calculated’ (ISA (NZ) 320, 2011). This language is fundamental to ensuring that qualitative factors are incorporated into the final materiality value. The Statement of Standard Accounting Practice-6, albeit superseded, puts it into more layman’s terms, explaining how materiality percentages are not magic numbers and that the nature and amount of misstatements must be considered together when formulating materiality (SSAP-6, 1985).

To enable auditors to apply materiality, ISA (NZ) 320 (2011) dictates three levels of materiality be used in an audit engagement, which is consistent with the international ISA. Firstly, planning materiality is used to determine the overall audit strategy. Therefore, planning materiality determines the overall extent, scope, and subsequent cost of the audit (Waters & Tiller, 1997, p. 115). Secondly, performance materiality is considered at the individual class or transaction level (ISA (NZ) 320, 2011). This is used by the auditor to give an opinion of whether the individual transactions are materiality misstated. Finally, evaluation materiality is used at the end of the audit to determine if overall, the financial statements are fairly presented in all material respects (Rooij, 2009, p. 139).

#### 4.4 Determining Materiality – Practical Considerations

An important theme of materiality per the professional standards is the concept of auditor judgement. Chewning and Higgs (2002) suggest that an absence of defining rules may be due to the potential legal implications. This is supported by the common theme of the public and creditors, whereby they will target auditors in the event of a company collapse (often performed, as the auditor is the only entity remaining with the capacity to pay damages). The recent New Zealand Feltex Carpets case is a testament to this where the press were quick to identify the auditors (Vaughan, 2013). The deliberate caution from regulators to use a judgement based approach to determining materiality is perhaps best summarised with the idea that judgement cannot be replaced by mere calculation (Jacobs, 2001). Despite this, many researchers and professionals have called for a more rules-based materiality standard (Bernstein, 1967; R. Elliott, 1981; Kranacher, 2007; Roberts & Dwyer, 1998; Rooij, 2009). A full consensus, however, has not been reached.

Roberts and Dwyer (1998) suggest that judgement-based standards have caused “observed variation in materiality and risk judgements” (p. 575). Further, Roberts and Dwyer (1998) ask how the accounting profession can allow these standards to remain uncorrected, regarding a need for more rules-based guidance (p. 575). R. Elliott (1981), a then prominent member of the auditing community (Roberts & Dwyer, 1998), criticised the appropriateness of materiality guidance. R. Elliott (1981) suggested that a mechanical rule is put in place as this would allow users to see the precision of accounting statements. In a paper before R. Elliott (1981), Bernstein (1967) also recommended the use of definitive materiality standards to obtain uniformity in the accounting standards and therefore in judgements and opinions made. The study conducted by Dyer (1975) further highlighted the different materiality judgements of auditors’ which, among other things, was as a result of this judgement based

materiality standards. The call for uniform materiality standards is not limited to academic literature as Kranacher (2007) found that CPAs have consistently been seeking proper definitions and examples of materiality judgements.

In contrast, Moriarity and Barron (1979) argue against the use of rules based materiality standard. In their study, they found that there was a major disparity between the materiality judgements of audit firm partners. While this may indicate a call from auditors for a rules-based approach, these same auditors would encounter issues with being able to find and agree on one binding rule. Sunder (2010) explains how the pursuit of writing uniform standards, which would promote uniform methods of materiality determination, would shut the door on learning by experience and would reduce the effectiveness of financial reporting. Sunder (2010) goes on to suggest that to improve reporting we need to ensure a careful balance between judgement and rules, an idea that is evident in the current position of regulators in the standards they release.

In response to the array of calls for uniform standards, the two regulators FASB and US SEC have issued their opinions on the matter (FASB, 1980; Levitt, 1998). The FASB (1980) have remarked that “no general standards of materiality could be formulated to take into account all the considerations that enter into an experienced human judgement” (p. 4). The SEC chairman at the time, Arthur Levitt, made the interesting point that due to our changing business environment, accountants and auditors need judgement to be able to keep up with the new transactions and events that occur as part of normal business progression (Levitt, 1998). The SEC has taken a different approach and provided further materiality determination guidance (as opposed to mandates), as released in the staff bulletin No.99 (SEC, 1999). This guidance is centred on the need for auditors to consider qualitative factors such as imprecise estimates, earnings trends, and regulatory compliance, among others in determining materiality.

Perhaps the best example of the war between the rules and judgement-based materiality standard is found in comments made nearly 75 years ago. Carman Blough (Blough, 1949) states that “the question of what is material has puzzled a great many people over a great many years, yet nobody is prepared to define it so that it does not ultimately rest on someone’s judgment” (P. 13).

## 4.5 Disclosing Materiality

The inclusion of additional audit report disclosures is based on both the new ISA 701 (ISA (NZ) 701, 2015), which requires the disclosure of Key Audit Matters, and the revised ISA 700 (ISA (NZ) 700(Revised), 2015), which requires additional descriptive information on materiality. Specifically, how materiality applies to misstatements and therefore the audit opinion issued (Section 38(c)). Importantly, the standards do not specify that a materiality dollar value requires disclosure in the audit report.

Despite this, there are several examples, both in New Zealand and overseas, which have adopted the requirement to disclose Key Audit Matters, along with voluntarily choosing to communicate the dollar value (i.e. threshold) of materiality (Contact Energy, 2017; Kiwi Property, 2017; Vodafone Group Plc, 2015; Z Energy, 2017). While others have chosen only to disclose the standard materiality definition and how it impacts misstatements (Fletcher Building, 2017; Sky City Entertainment Group, 2017), the public should expect the materiality threshold disclosure to align over the next few years.

On this basis, the disclosure of materiality has begun in practice, and this is as a direct result of the new audit report disclosure standards.

## 4.6 Disparity Between Auditors in Determining Materiality

Regardless of the position of a judgement based vs rules based materiality standard, there are significant implications and differences regarding how auditors determine materiality and how users determine and understand materiality. This discrepancy is a manifestation of the audit expectations gap which is one of the more thoroughly explored areas of auditing research. In fact, this is an area of auditing which is over one hundred years old (Houghton et al., 2011, p. 164).

Chewning and Higgs (2002) provide a historical account of the development of materiality and more specifically, how auditors have formed materiality judgements. Chewning and Higgs (2002) conclude that there are considerable variances in the materiality judgements of auditors (p. 70).

Friedberg, Strawser, and Cassidy (1989) executed an extensive study on the audit manuals of 'Big N' audit firms. The empirical evidence suggested that the quantitative and qualitative guidance in the manuals differed significantly. This ultimately led to a significant disparity in the judgements between the 'Big N' audit firms. Martinov and Roebuck (1998), a similar study performed nearly ten years later, supported these findings. Iskandar and Iselin (1999) performed a major review of audit literature on materiality judgements which was separately revisited a decade later in a 2005 paper (W. Messier, Martinov-Bennie, & Eilifsen, 2005). These two reviews both concluded in support of a significant disparity between auditors' materiality threshold judgements. Ward (1976) in his limited sample study (regarding geographic region and firm type), suggested that auditors show consensus in the factors that are essential to making materiality judgements. However, the relative importance of each factor was found to be very diverse. Pany and Wheeler (1989a) explored these factors by testing the sensitivity of five rules of thumb and found that in one industry, the largest

threshold was more than 18 times greater than the smallest threshold. Carpenter, Dirsmith, and Gupta (1994) suggest that the potential cause of this disparity between auditor judgement is related to the social constructs and experience in each member firm. In other words, the results suggest that firm culture and firm experience are primary factors in auditor materiality judgements.

Morarity and Barron (1979) conducted a study investigating the decision processes of audit firm partners, as opposed to the firm's policies. They concluded that there was a lack of consensus and a major diversity between audit partner materiality judgements. This was supported by the slight variation identified in the similar study conducted by W. F. Messier (1983). However, it was ultimately suggested that there was a moderate collusion of judgement, indicating an overall lack of definitive consensus between audit partners' materiality judgements.

Azzopardi and Baldacchino (2009) explored audit judgements of both the 'Big N' and smaller audit firm materiality judgements. What they found was that while 'Big N' audit firms change materiality judgements with each client, smaller firms use a blanket percentage rate which is often unchanged (p. 22). The impact of this in terms of audit quality is profound and would be extremely concerning to regulators and users.

Despite research suggesting a various disparity between the materiality judgements of auditors', Waters and Tiller (1997) suggest that while a variance exists, it should not be abnormally large or small. Specifically, the materiality threshold would not be too significant as this would risk litigation and other costs that may arise from audit failure. Also, the materiality threshold would not be set too small as this would raise the cost of the audit. Waters and Tiller (1997) are ultimately suggesting that while a disparity exists, it is not

expected to be so large as to negatively affect the quality of the audit, as the risks and costs of doing so would be too great.

#### 4.7 Disparity Between Auditors and Users in Determining Materiality

Porter (1993), in a leading paper on the audit expectations gap, defines the expectations gap as the difference between users' perception of what an audit should perform and the users' perceived level of auditors' actual performance. This description is consistent with Monroe and Woodliff (1993) as stated in chapter 3.4. Specifically, the gap comprises of a limitation in the standards, and a difference between the duties of the auditor and the perceived duties.

Firth (1979) investigated 150 individuals from different backgrounds to determine, in part, whether individuals would disclose 'extraordinary' items, based on losses and gains from the sale of business assets. His results suggest that accountants (auditors) have the lowest probability of disclosing extraordinary items. Further, it is identified that investment analysts and lenders have a much higher disclosure rate of these 'extraordinary items'. If we consider investors and lenders as two of the most relevant user groups to listed company financial information (as is highlighted by Bamber and Stratton (1997) and Schneider and Church (2008)), the significance of this disclosure disparity between users and auditors is identified.

In support of Firth (1979), Jennings, Kneer, and Reckers (1987) performed a study which compared auditors' materiality judgements to that of users, financial analysts, lenders, and credit managers. The results suggest that the auditors' materiality thresholds were higher than both credit managers and financial analysts, with bank lenders having the highest threshold. Ultimately, the result indicate that materiality judgements of auditors do not coincide with that of the user.

The use of non-empirical studies identify a similar trend in disparity. Gray et al. (2011), in their focus group discussions, found that assumptions about materiality levels differed wildly from user to user (p. 670). Also, some stakeholders regarded the disclosure of materiality to have inherent issues if the users do not understand the quantitative and qualitative factors that went into producing that number. Houghton et al. (2011) utilised face to face interviews with various stakeholders of financial services including lenders, analysts, auditors, and standard setters. The non-audit (user) groups supported the conclusions of Gray et al. (2011), suggesting that materiality is not very well understood.

Holstrum and Messier (1982), a major paper summarising materiality research up to 1982, concluded that there are considerable differences between users and preparers of materiality. In general, users had lower materiality thresholds than auditors, with a larger gap between auditors from larger firms compared to smaller firms. In the similar study two decades later, W. Messier et al. (2005) reiterated the findings identified 20 years earlier. Furthermore, another seminal study on previous materiality literature but focused specifically on materiality judgements, Iskandar and Iselin (1999), as discussed above, concluded that there is a lack of consensus between auditors and other user groups with regard to materiality perceptions.

Pany and Wheeler (1989a) best summarise the issue of disparity between materiality judgements. In their comprehensive study of 330 companies in 25 diverse industries, they found that the disparity between materiality judgements are so wide that they can not be summarised.



## 4.8 Disclosure of Materiality - Benefits

Many researchers have been calling for the public disclosure of materiality (Chewning & Higgs, 2002; Davis, 2007; Doxey, 2013; M. Fisher, 1990; Waters & Tiller, 1997). Further, Houghton et al. (2011, p. 497) have evidenced a call from users for more action in general on materiality. In consideration of this, there are two opposing positions which identify both benefits and disadvantages of disclosing materiality, and ultimately the volume of research which aims to examine the issue is minimal.

As considered, a significant benefit of the disclosure of materiality is that it can assist the audit expectations gap. Specifically, the disclosure of materiality can contribute by highlighting that an audit does provide assurance within a range, rather than providing 100 percent assurance over the audited values (Houghton et al., 2011). This ultimately reflects the level of confidence that users can place in an audit (Davis, 2007). Gray et al. (2011) support this by finding that some stakeholders perceive the level of materiality and the level of assurance to be the same general concept. Litjens, Van Buuren, and Vergoosen (2013) are other proponents of the disclosure of materiality, suggesting that the audit expectations gap is reduced with additional information regarding materiality is disclosed.

Davis (2007) and M. Fisher (1990) both use the disclosure of materiality in experimental market settings (refer to chapter 4.10 for further detail on these two studies). They both suggest that the disclosure of materiality can lead to more efficient markets. Further, Turner (2003, p. 16) suggests that the disclosure of materiality can aid the transparency of the financial statements and therefore their confidence and credibility.

Davis (2007, p. 5) highlights how the disclosure of materiality may “prevent managers from intentionally recording errors within the boundaries of the auditor materiality threshold”, where the opposite is likely true. This form of earnings management is of paramount concern

to the SEC with the then Chairman, Arthur Levitt, dedicating his speech, 'The Numbers Game', (Levitt, 1998) to the issue of earnings management and how poorly the accounting profession has handled it. The SEC (1999) have gone further to suggest that the disclosure of materiality can aid the dissemination of information for equity users.

#### 4.9 Disclosure of Materiality - Disadvantages

Gray et al. (2011, p. 677) identified that clients might use materiality threshold disclosures to source firms with high materiality levels as they know these audits will be cheaper.

Additionally, the paper also recognises that disclosure may increase the risk of litigation, therefore pushing up audit fees as a whole (p. 678). Simunic and Stein (1996) support this suggestion through their review of empirical literature. Specifically, they identified that an increased risk of litigation would increase audit fees.

Houghton, Jubb, Kend, and Ng (2010) found that stakeholders believe disclosing materiality will open numerous issues on how users perceive that information (p. 241). This is due to the severe lack of understanding that users have about materiality (p.218). Gray et al. (2011) support this claim in their similar and more recent study. Houghton et al. (2010) also considered that the audit report may not be fully read. Specifically, users typically only read the auditor's opinion paragraph (p.252) which raises doubts on whether any additional disclosures would be read.

R. Fisher (1993) explored the effects of changing from a long-form to short form audit report in New Zealand. Specifically, there was an effect where the long-form report was viewed as showing reduced auditor responsibility for the financial statements. As auditors are not

responsible for the preparation, it can be perceived as reducing the audit expectations gap and can indicate a better understanding of the audit process.

While many of the studies above discuss the concept of the disclosure of materiality, very few conduct empirical research on the disclosure of materiality and its effects on user's decisions and actions.

#### 4.10 Previous Research on the Disclosure of Materiality

Davis (2007) uses experimental markets in a computerised session to investigate how the disclosure of materiality affects investors' perceptions of the audit report and market behaviour. He used materiality set at the five percent, ten percent of asset value ("general rules of thumb", p. 9) and no disclosure parameters. This is important as it detracts from the SEC (Levitt, 1998) statement that qualitative factors must also be used in determining materiality (while acknowledging that these rules of thumb could be argued as already including non-quantitative considerations). However, as concluded by Chewning and Higgs (2002), and supported by real audit data from Waters and Tiller (1997), these common rules of thumb are, and will continue to be, used by auditors. Davis (2007) provided participants with an auditor's report and an analyst's report (highlighting other financial information available in the capital markets). The results drawn reflect a reduction in the overconfidence of investors in the audit report. Further, the paper supports the call for further investigation into the mandated disclosure of materiality (p. 29).

M. Fisher (1990), similar to Davis (2007), uses the disclosure of materiality in an experimental markets setting. However, M. Fisher (1990) explores the effect of the disclosure of materiality on security prices, trading volumes, and profits. Participants were given a

company 'fact sheet' (p. 193) consisting of projected and other earnings information, in addition to an audit report. Private (materiality) information is manipulated in the following three treatment effects: (1) no materiality threshold is disclosed, (2) materiality thresholds are disclosed to two people, and last (3) it was disclosed to everyone. This method was to test whether private disclosure of materiality can extrapolate to the rest of the experimental market. Similar to Davis (2007), five percent and ten percent thresholds (of earnings) were used. The results reflect that the nondisclosure of materiality led to mispricing of securities. Further, the disclosure of materiality assisted in the efficient operation of the experimental market with public disclosure having a greater effect on resolving efficiency than private disclosure. This result is consistent with Tuttle, Collier, and Plumlee (2002), who also used experimental markets to test the effect of undisclosed materiality on share prices. The results suggested that undisclosed misstatements below common materiality levels did not affect stock prices whereas undisclosed misstatements above common materiality levels did. Overall, M. Fisher (1990) supports the call for further investigation into the disclosure of materiality.

Doxey (2013), a more recent paper, used two empirical experiments based on auditor disclosures. First, Doxey (2013) explores how auditor agreement with management estimates affects independence perceptions. Second, Doxey (2013) manipulated a question on user materiality perception, either before or after the public disclosure of materiality by the auditor. This was done to ascertain a possible anchor effect of user materiality perception. The results of the second experiment suggest that users anchor their materiality choice to that determined by auditors when they are presented with public disclosure before making a materiality assessment. In other words, if a materiality threshold were disclosed to financial statement users, they would form a similar materiality determination as auditors. Consistent with M. Fisher (1990) and Davis (2007), Doxey (2013) supports the call for further

materiality research. There were significant limitations evident in this study through apparent demand effects, where participants had knowledge that their decisions were based on materiality disclosure, along with small research samples. Further, these limitations may explain the lack of support for detecting investment decision effects with regard to materiality.

Ruhnke et al. (2014), another working paper, explored the effect of how disclosing materiality levels and changing the profitability of an entity would affect credit lending decisions of senior bank executives in Berlin. Further, they explore the elasticity of lending decisions under different profitability scenarios. The results suggest that when materiality thresholds of auditors correspond with the executives, the lending decisions are not changed. However, when materiality is above user expected levels, the credit lending decision does change. The major demand effects of this study are its significant limitation, similar to Doxey (2013). Specifically, Ruhnke et al. (2014) directly provided the three levels of materiality (within subject design) and subsequently asked the probability that the bank executive would grant the loan. Furthermore, materiality is set at three levels of materiality, five percent, 15 percent, and 25 percent of profit before tax. It can be considered that as 15 and 25 percent are not common rules of thumb (i.e. not similar to the more common thresholds used in studies by Davis (2007) and Tuttle et al. (2002)), Ruhnke et al. (2014) are at risk of compiling unrealistic conclusions. Similar to the investment decision in Davis (2007), Ruhnke et al. (2014) concluded that the investment decision does not necessarily change with the disclosure of materiality.

A recent 2015 study was conducted by Gutierrez et al. (2015) which investigated the costs of audit, audit quality, and investor reaction (regarding share price and trading) following the recent UK legislation which requires reporting of Key Audit Matters, including materiality determination. Gutierrez et al. (2015) identify that audit fees have increased by seven percent

for adopter entities for one-year post-adoption of the new standards. However, it was also suggested that an “increase in transparency in an audit report does not translate into better audit quality” (p. 26). Finally, the report does suggest that with smaller materiality thresholds disclosed, audit quality is increased. An important limitation is that this study only investigates one year of effects, with no long term considerations made.

#### 4.11 Summary

New regulations support additional materiality disclosures as part of the wider Key Audit Matter reforms. Furthermore, market participants have taken charge with public materiality threshold disclosures for many New Zealand listed entities. Therefore, it is clear that additional academic research is required. Further, there are clear advantages and disadvantages to public disclosure, coupled with any change in auditor reporting having profound implications regarding the audit expectations gap. With these issues and a scant amount of prior research, further studies are desperately needed to explore what impact public materiality threshold disclosure will have on both the decisions of users and their related perceptions of audit quality.

## 5. HYPOTHESES DEVELOPMENT

As is evident from the literature review, there is a significant lack of prior research regarding the disclosure of materiality and how this may impact the decisions of users. Further, it is clear that market participants (listed company's and auditors) are pressing ahead with auditor materiality threshold disclosure with little academic support on that potential impact.

Therefore, this study will attempt to assess whether a change in non-professional investor decisions is possible, following a change in materiality threshold disclosure.

Gray et al. (2011) suggest that materiality threshold disclosure and the level of assurance are intrinsically linked. There are two factors to this. First, users of audit reports will either view larger materiality thresholds as a result of the auditor perception of lower engagement risk and therefore a higher materiality is set for the lower required audit work. Alternatively, the higher materiality thresholds are interpreted by users as providing less assurance over the financial statements.

The significant extent of audit expectations gap research (refer to chapter 4.7) suggests that the latter will be true and users are likely to perceive higher materiality threshold disclosure (compared to no or low materiality threshold disclosure) as providing less overall assurance. On this basis, it is expected that with higher materiality thresholds disclosed, the result would be a decrease in investment in the company.

The research is built on the widely known neoclassical theory of the 'rational investor', relating to risk aversion and has been explored by numerous academics (Cohn, Lewellen, Lease, and Schlarbaum (1975); Felton, Gibson, & Sanbonmatsu, 2003; Morin & Suarez, 1983). The overall idea is that with higher perceived risk, resulting from the increasing

materiality threshold disclosure (i.e. from no disclosure to disclosure and from a small threshold disclosure to a larger threshold disclosure), investors are expected to shift their holdings from higher perceived risk assets (in the case of this study, a hypothetical company), to less perceived risk assets (in the case of this study, NZ Government Bonds). Cohn et al. (1975) suggest that the participants should still invest in both (i.e. a combination). However, this combination should shift to the lower perceived risk asset with a higher perceived investment risk.

From this, the first null ( $H1_0$ ) and alternate ( $H1$ ) hypothesis is derived:

***H1<sub>0</sub>:*** *An increase in the materiality threshold disclosure will not lead to a decrease in the proportion of investment in a hypothetical entity shares.*

***H1:*** *An increase in the materiality threshold disclosure will lead to a decrease in the proportion of investment in a hypothetical entity shares.*

Consistent with the first hypothesis ( $H1$ ), the higher materiality threshold disclosure would cause investor perceptions to shift, where they would identify lower assurance being provided (by the auditor) over the financial statements. Therefore, with less assurance perceived by investors, the perception of audit quality should also reduce. This is founded on the basis that a reduction in assurance reduces the information value (i.e. increases information risk) of the audit opinion, and therefore the audit as a whole (Doxey, 2013). Further, audit quality has been identified as being linked, in part, to the ability of the auditor to detect misstatements (DeAngelo, 1981), whereby an increase in materiality will reduce this ability.

On this basis, the second null ( $H2_0$ ) and alternate ( $H2$ ) hypothesis is derived:

***H2<sub>0</sub>:*** *An increase in the materiality threshold disclosure will not decrease the perceived audit quality.*



***H2: An increase in the materiality threshold disclosure will decrease the perceived audit quality.***

From the development of these two null and alternate hypotheses, the research methodology and design have been formulated.

## 6. METHODOLOGY AND RESEARCH APPROACH

### 6.1 Methodology

This study adopts the mainstream approach, as described in Chua (1986). This reflects a realism ontology through which an independent reality exists, and absolute truth can be obtained from this reality. The research will follow a deductive approach and use positivism epistemology in obtaining the truth from the objective world. This approach is similar to Marcoulides and Heck (1993) and, as this research controls behaviour, as opposed to merely observing it, this methodology can be deemed appropriate.

### 6.2 Sample Selection

This study uses undergraduate students from the University of Canterbury, who are primarily studying commerce, as a proxy for non-professional investors. Using students (including using undergraduate students) as proxy investors have been conducted in various prior research, and those which specifically relate to audit reporting (e.g. Davis (2007) and M. Fisher (1990)).

#### *6.2.1 Using students as participants*

Using students as participants is appropriate due to this study targeting the non-professional investor group. Furthermore, as investors can vary in nature (such as large institutions, small banks and building societies, hobbyists, Mum's and Dad's (Tarrant, 2012), and students), for any investor decision research to be applied to the full population, a significantly large and diverse study would be required. This is a fruitful area for further research and one best suited to a larger sample study. However, and of significant consideration, as much as 34 percent of

share ownership (in the US) is held by ‘non-professional’ investors’ (Holt & DeZoort, 2009). As a consequence, this study can still be deemed to generalise its results to a reasonably large proportion of the investor population.

Student surrogacy research has been conducted in the audit space with the principal papers, such as Ashton and Kramer (1980), suggesting that it may be appropriate given the ‘right’ conditions. These ‘right’ conditions are explored in the next subsection. In any case, the ease of access to undergraduate students is a major factor in the sample selection.

#### *6.2.2 Using undergraduate students as non-professional investors*

This study uses undergraduate students as non-professional investors. To ensure this is appropriate, this study has based the overall research design on the suggestions, albeit amended for undergraduate students, of W. B. Elliott, Hodge, Pronk, Jollineau, and Jane (2004). They posit that using graduate students is appropriate so long as researchers match the experimental design to the participant education and work experience level. This is explained in subsection 6.2.3. Despite this, the use of undergraduate students as a proxy for non-professional investors is a limitation as described in chapter two of this study, in line with research conducted by Abdel-Khalik (1974).

#### *6.2.3 Strategies used to improve the validity of using student surrogates*

Firstly, Hodge, Kennedy, and Maines (2004) (as supported by Frederickson and Miller (2004)) suggest that non-professional investors read information sequentially. Therefore, there was no manipulation of the order of information. Instead, all participants were given the company summary, income statement and balance sheet extracts, summary ratios, and audit

report extract in that same order (i.e. in the order they would often see these pieces of information in publically listed financial statements (Contact Energy, 2017; Z Energy, 2017)). This also had the effect of avoiding confusion within the undergraduate students, where one may have had a different order of the experiment materials.

Enis (1986) identifies that non-professional investors handle financial ratios better than other financial information (such as an income statement). Therefore, basic ratios, with benchmarks to the hypothetical industry, were incorporated at the end of the summary financial information (noting that non-professional investors read information sequentially). As a result, the better-understood information (i.e. financial ratios) is placed closer to the dependent variables, meaning more valuable and knowledgeable decisions are expected.

Sun (2007) suggests that semi-professional investors better comprehend the understandability of annual reports, as compare to non-professional investors. This is primarily driven by the significant use of jargon in financial data and reports. On this basis, all experiment wording was carefully constructed to either be explained (i.e. defining shares and bonds) or simplified so that only plain English remained.

Hofstedt (1972) determines that graduate students do not differ significantly to executives, regarding the understanding information, except in terms of the time required to process the information. This is supported by Arnold, Bedard, Phillips, and Sutton (2008), where they indicate that the use of analysis and management discussion is better understood by non-professional investors, as opposed to executives. Therefore, while attending the undergraduate classes, students were advised that they had no time limit (however, 15 minutes was an expected time based on preliminary test sampling). Furthermore, a brief background summary was provided, along with extract audit opinion, extract income statement and balance sheet, and financial ratios. On the one hand, this ensured excessive

time was not required and second, provided the type of extract and simple information best suited to non-professional investors.

Pinsker (2007) investigated how undergraduate students value stock and one of the questions related to how ‘hard’ they deemed the study. From this, Pinsker (2007) concluded that the undergraduate students did not find it overly ‘hard’, suggesting that financial information can be interpreted (with relative ease) by undergraduate students. This supports the use of undergraduate students as non-professional investors.

Lastly, a key consideration is the experiment question which queried whether participants have either traded in shares (albeit only 14 percent noted that they had), or whether they had an intention to trade in shares or bonds over the next five years, where 78 percent of the participants indicated they did. This is significant as it shows that the participants were at least interested in making investment decisions over the short-medium term. Therefore, this suggests the participants were likely interested in the decision variable of the study.

Further considerations of tailoring the research design to undergraduate students is discussed in the experiment design per chapter 6.3. Overall, a final sample of 49 participants was obtained. A summary of key participant statistics is provided below.

### Summary of Participants

	Control	5% Disclosure	10% Disclosure
Total Participants	17	17	15
Male	9	10	9
Female	8	7	6
Average Age	20-21 Years	20-21 Years	18-19 Years
Average Accounting Courses Taken	1-2	1-2	1-2

#### *6.2.3 Other sample considerations*

This study utilises a 3x1 experiment. Therefore, the most appropriate sample size would be roughly 45 participants – being 15 participants per experiment variable. The final sample obtained was 49 (with a minimum of 15 per cell) which supports the drawing of conclusions made. However, there is the likely impact of low statistical power due to the smaller sample size obtained. On this basis, the results will likely be conservative. The final sample excludes the three experiments which were discarded as they were not complete or due to inappropriate responses being recorded (i.e. two answers for one question).

During the early planning and feasibility stage of this research, an attempt was made to use a lending decision, rather than investing – based on research by various other studies (Danos, Holt, & Imhoff Jr, 1989; Firth, 1980; Gul, 1987; Ruhnke et al., 2014). It was identified through phone and email conversations with three non-bank commercial lenders that they did not use audit reports when considering their lending decisions. This is an important insight as it suggests that the user base of financial information, including audit report users, may be more limited than first thought. It is also in contrast to the methods used in other studies (as above). However, with no responses obtained from the larger banking lenders, hence the

change to investing decisions, this conclusion has significant limitations. Further, with the current New Zealand materiality threshold disclosure only occurring in larger listed entities, which arguably would use large commercial banks for lending, it is entirely possible that these large banking lenders would require the use of audit reports. Therefore, it may still be valid to investigate changing auditor disclosure on these large bank lending decisions – as is noted for further research.

### 6.3 Design of Experiment

A critical paper on audit reporting highlights three links (refer to figure below) in relation to audit report research (Libby, 1979, p. 100). Link 1 is how users perceive the auditors intended message. Link 2 is the decision made from that perception and link 3 is the outcome of that decision. The research design has been constructed based on links one and two (how stakeholders perceive extract audited financial information and their investing decisions (i.e. reactions) based on that perception).

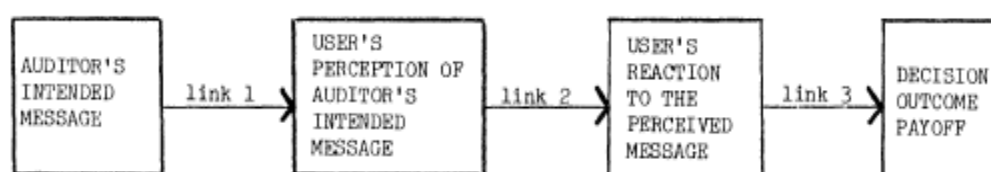


FIG. 1.—The impact of the auditor's report on decision making.

Further studies would find it beneficial to explore the third link, researching the outcome of investor decisions as a result of materiality threshold disclosure.

This experimental task involves an investment decision in either a hypothetical NZX listed entity (“NZ Building Suppliers Ltd”) or New Zealand Government bonds (or a combination of the two), where the manipulation of audit materiality threshold disclosure is hypothesised

(refer to chapter 5) to impact that decision. The various components of the experiment materials is explained as follows:

### *6.3.1 Company background*

To ensure participants fully read and understood the company background, the research instrument began with a statement suggesting the participants spend ‘a few minutes’ to read it. This is founded on the idea of Hofstedt (1972), where so long as the students have sufficient time, they can appropriately understand the information.

The NZ Government bonds were explained as being ‘risk-free’ but likely having lower returns on average than the shares in the hypothetical entity. It is also explained how capital gains and bond/dividend returns were ways in which to make money from the two investments. It is important to explain this to the non-professional investors (and the undergraduate students) to ensure the ‘jargon’ was appropriately removed or simplified (Sun, 2007). Also, to acknowledge that the undergraduate students would most likely not know these concepts of investment returns well. The dividend policy and bond interest was provided to enable comparisons between the investments and was set at levels which ensured they were comparable. Despite this comparability, the hypothetical company was created to be slightly more attractive. This was done in an attempt to ensure the extract audit report, and related materiality threshold disclosure, is used in the decision (where the audit report is based on company financial information).

Comments were added that the hypothetical entity had been audited by a large and registered audit firm. No reference was made to an audit firm name to ensure participants did not perceive a higher quality audit (where this could occur in the case of a ‘Big N’ audit opinion being issued (Mock et al., 2009)).



### *6.3.2 Financial information*

As described in chapter 6.2, participants were provided with a summary of the company background, extracts of the income statement and balance sheet, along with financial ratios. This is built on the study by Vergoossen (1993) who identifies what information is identified as important to investors, albeit professional investors. Specifically, for New Zealand investors it was identified that the income statement, balance sheet, and operation summaries (which could include ratios) are critical to investor decisions.

The hypothetical company was made to appear plain, yet 'positive' (to ensure the audit report is appropriately considered). The entity was based on a large NZX listed entity and then adjusted based on various factors to remove any reference to the original entity. For instance, financial statement lines were amended to give generic narrations (selling and admin expenses, etc) and only extracts were provided. This was performed to increase the participants' understandability of the information.

The dollar values were reduced down to millions and rounded. This ensures participants were able to effectively analyse the data, without having to consider rounding or be impacted by 'large' dollar values which the participants may perceive as being more positive. Percentage changes and basic (based on stage one university accounting studies) ratios were presented, on the basis, they are better understood by non-professional investors (Enis, 1986).

Furthermore, pre-made percentage changes and ratios are provided to reduce the manual analysis required of students. This results in time-saving and ultimately ensures the analysis is performed correctly (i.e. ensures incorrect calculation will not impact the dependent variables). Benchmarking of ratios to fabricated industry averages reflects the hypothetical company as being slightly above (or at) the industry benchmark. As a result, the hypothetical

entity will be viewed by participants as plain and not significantly positive or negative which could distract participants (Estes & Reimer, 1979).

Dollar values were amended in the income statement, and balance sheet extracts so that the movement was roughly a ten percent nominal improvement in 2017, compared to 2016. This ties into the narration provided where returns in the shares are partly derived from profit. Furthermore, this ten percent increase ties through to the highest materiality manipulation, meaning participants who are provided with a ten percent materiality threshold would identify negligible profit movements if a misstatement below the materiality threshold existed.

### *6.3.3 Preliminary questions*

Four initial manipulation questions were raised to ensure participants had read the essential information. First, participants confirmed the profit result of the hypothetical entity which the materiality value is based. Second, participants confirmed the investment period of the shares and bonds to ensure they understood the investment period was identical (as it was assumed undergraduate students might view the share investment as a perpetuity). Third, participants confirmed the return possibilities from the two investments (which the ultimate investment decision is based) to ensure they understood how returns were derived. Lastly, participants confirmed the concept of risk in the two investments to ensure they understood this concept as part of their investment decision. This is important, as it is hypothesised that the concept of rational investor risk preferences will drive the investment decision (refer to chapter 5).

#### *6.3.4 Audit report extract*

The audit reports were based on the latest audit report format of a large NZX listed entity. This was then reduced to an extract of the audit opinion, based on research which commonly suggests that extracted parts of the audit report are all that is read (Houghton et al., 2010; Mock et al., 2009).

In addition to the standard audit report wording (based on pre Key Audit Matter Disclosures), a materiality definition (control) and threshold (for the five percent and ten percent threshold disclosures) were added. The materiality descriptive comments are based on the Auditing Standards (ISA (NZ) 320, 2011; ISA (NZ) 701, 2015). The materiality values shown are based on either no disclosure, a value based on five percent, or a value based on ten percent of net profit before tax in the hypothetical entity.

Auditing standards (ISA (NZ) 320, 2011) suggest that the determination of materiality should also be based on qualitative factors and not just a benchmarked number. However, academic research suggests that quantitative ‘rules of thumb’ are commonly used by practitioners.

Chewning Jr and Higgs (2000) performed a recent and major meta-analysis of materiality studies. They concluded that revenue, assets, and equity (i.e. quantitative) were main factors in auditors’ materiality judgements with working capital, earnings trends, firm size, current assets, and return on investment (i.e. qualitative factors) all having small effects on materiality judgements. Waters and Tiller (1997), which used real audit data, reiterates the conclusions found by Chewning Jr and Higgs (2000). Further, a later study by Chewning and Higgs (2002) suggests that the common rules of thumb are unlikely to be dropped. In addition, prior materiality research has also used the standard five percent and ten percent materiality benchmarks in their studies (Davis, 2007; Doxey, 2013; M. Fisher, 1990). On this basis, the use of five percent and ten percent materiality benchmarks appears reasonable.

### *6.3.5 Investment decision*

The investment decision is based on selecting a split of the investment value into either the risk-free NZ Government Bonds or the investment in the hypothetical company. The use of \$1000 investment increments is added for simplicity, and the value of \$7,000 was chosen based on the standard seven-point Likert scale, used throughout the study. The use of this investment split is constructed from the investment decisions employed by Doxey (2013), Lipe (1998), and Milne and Chan (1999). The participants were to invest their own money which ensures they consider their personal risk preference and to create a personal view of the investment (Milne & Chan, 1999). Further, participants were advised that they did have the \$7,000 to invest which reduces the income differences between participants.

### *6.3.6 Perceived audit quality*

To address audit quality, a question is asked regarding participants' perceived reliability of the audited profit value in the hypothetical entity (i.e. the value that derives the materiality threshold). This is based on similar questions by Doxey (2013) and Hodge (2001), who elicit responses on the credibility of information and likelihood of misstatement. This question addresses how participants perceive audit quality as the reliability of audited values is a direct measure of reliability in the audit (i.e. if participants do not believe the audited values are reliable, this is due to their perception that the audit did not appropriately correct errors (DeAngelo, 1981)). The main advantage of this question is that it removes potential demand effects by not directly asking if participants believe the hypothetical auditor performed a quality job. The downside of not using additional questions on audit quality is the limited reliability checks that can be carried out (refer to chapter 7.1).

### *6.3.7 Other questions*

The level of risk associated with the investment decision is added as form of manipulation check. It is also a way to ensure reliability of the dependent investment decision variable (i.e. where a greater investment in the risk-free NZ Government bonds is chosen, a positive correlation is expected with the participant's perceived level of risk in the NZ Building Suppliers Ltd). Furthermore, the use of the seven-point Likert scale to determine risk perceptions (seven-point Likert scales are used throughout the study) is based on the similar study by Charness, Gneezy, and Imas (2013), where they used a ten-point Likert scale to elicit risk preference. This study has used a seven-point scale to reduce the time participants spent in the experiment environment (i.e. to not make it overly burdensome), along with ensuring the reliability and validity of the results (Weber, Weber, & Nosić, 2012).

The question on participants' belief in being a financial risk-taker is a covariate for risk propensity of the investor. This is based on Charness et al. (2013) who suggests that questionnaires may be used to elicit risk preferences.

Participants' confidence in their previous decision's is elicited and utilised to ensure the participant is happy with their answer. This can then be used to indicate reliability and validity of the responses (Hirst, Koonce, & Miller, 1999).

The order of information preference is derived from Holt and DeZoort (2009) (who used a 100 point scale) and is added to determine what information the participants based their investment decision. It is a form of validity check, where the low preference for audit opinion may indicate the quality of response – as the independent variable may not be effective at driving the dependent variable responses.

The question covering the materiality threshold is a direct manipulation check on the independent variable and has been added below the investing-based decisions to remove demand effects, which is noted as a limitation in the study done by Doxey (2013).

The two questions which ask the auditor concern for material misstatement and the impact on the audit opinion as a result of identified misstatements, are a manipulation check on whether the participants grasp the concept of materiality. These are considered advanced for the undergraduate students. However positive responses would support the reliability and validity of the study.

#### *6.3.8 Demographic questions*

Various demographic questions assisted in eliciting differences in responses due to age, gender, and accounting history.

Specific questions on experience with audit reports and financial information is provided as a covariate for the investment decision and the perception of audit quality (i.e. the two dependent variables). Additional questions on share trading history and intention to trade (based on a similar question by Hodge et al. (2004)) to elicit the interest that participants may have had in the study.

### **6.4 Research Analysis**

Due to the quantitative nature of this study, statistical methods will be utilised first to examine the validity of the study and variables. This is based on Pearson's R tests. Second, analysis of variances between the independent variable and the two dependent variables is used for the basis of hypotheses testing. This is based on the ANOVA technique. The

analysis will also incorporate relevant covariates (refer to chapter 6 for covariates identified) into the analysis using ANCOVA techniques.

The statistical analysis translates the questions answered into numbers for analysis. For the investment decision question, the end-points are 1=\$0 investment in shares and a \$7000 investment in bonds, 8=\$7000 investment in shares and \$0 investment in bonds. For the seven-point Likert scales used in the remaining questions, an answer of 1= negative connotation and an answer of 7=positive connotation (specific interpretation by question is provided where appropriate).

## 7. RESULTS

### 7.1 Study Validity

This study has sourced the appropriate validity criteria from other quantitative investment decision-related studies, along with general statistical understanding of what is considered suitable for academic study. Where relevant, specific support for statistical benchmarks are provided.

#### *7.1.1 Manipulation validity*

With the use of undergraduate students as participants, this study has adopted an array of manipulation tests to ensure participants had read and understood the appropriate information (i.e. audit report extract, key financial themes, and the concept of risk). A summary of these key manipulation test results are as follows:

*Table 1 – Summary of key manipulation checks*

	Profit Making	Investment Period	Materiality Disclosure	Investment Return	Understanding of Risk
Correct	96%	76%	94%	84%	94%
Incorrect	4%	24%	6%	16%	6%

First, over 96 percent of the participants understood that the company was making a profit, 76 percent understood the investment period was one year for each investment, and 84 percent understood how the investment returns were derived (being share dividends capital gains, and interest for the bonds). Further, 94 percent of participants understood the concept that shares in the hypothetical company will hold greater risk than the NZ Government Bonds (i.e. the bonds are considered risk free per the experiment summary – see Appendix). As this study is



founded on the rational investor theory, this is an important validity check which ensures this concept of risk is understood, prior to making the investment decision.

In addition, 94 percent of participants answered the materiality question correctly, supporting the view that participants were actively aware of the materiality threshold disclosure when they made their investing decision. It is identified that 34 percent of participants identified the audit report in their top three pieces of information (where the five pieces are company background, income statement, balance sheet, financial ratios, and audit report). This does indicate a low to moderate use of this independent variable. However, 84 percent of participants identified the income statement in the top three. This suggests that participants did heavily rely on the statement, where this derives profit, and therefore the materiality threshold disclosed.

This study also controlled for income variations between participants by stating they had the \$7,000 available to invest, similar to Holt and DeZoort (2009) who control for income differences using a family member scenario. To ensure participants incorporate risk into their decision, the study specifically noted that they were to invest their own money.

While any participant who scored one of these manipulation checks wrong could have been excluded from the study, this has only been done if at least two of the five tests were answered incorrectly. This has been deemed appropriate given the students are undergraduate (i.e. have limited technical understanding of the key concepts) and a mistake in two areas, but correct in the others, does not necessarily indicate that the participant has not fully grasped the fundamental concepts. This is supported by Holt and DeZoort (2009) who allow for one (of two) manipulation check to be answered incorrectly, yet the participant responses remain in the research analysis.

Furthermore, being wrong in an area is entirely possible due to information not being fully

understood due to too much Jargon in the research materials Sun (2007). On this basis, the outcome of this approach was that only three samples were removed from the testing.

It is concluded from the analysis that participants had likely understood the materiality threshold manipulation treatment (i.e. received the impact of the independent variables).

### *7.1.2 Statistical validity*

This study has utilised Excel statistical functions, statistical calculators, and SPSS software to ensure appropriate, reliable statistical calculations. Scaling is used where relevant to ensure the eight-point investment decision Likert scale is comparable with the seven-point Likert scales used for the remaining questions. A minimum significance level of ten percent ( $p\text{-value} < 0.1$ ) is used throughout this study (and lower, where deemed relevant). This is appropriate given the sample sizes drawn. Despite this, the use of a ten percent significance level has also been used in prior research which assesses audit report disclosure and investment decisions (Gómez-Guillamón, 2003; Weber et al., 2012), albeit incorporating both five and ten percent significant levels at varying points. It would be appropriate for future studies, which refine the experiment materials, to use a lower significance level (such as  $p\text{-value} < 0.05$  or  $< 0.01$ ).

### *7.1.3 Construct validity and reliability*

Construct validity is founded in the significant prior research which has been the basis for the research design of both the experiment questions and the summary financial information (refer to chapter 6). Furthermore, the study utilised (and amended through extracts) a real

audit report and financial statement data (as adjusted from an NZX listed entity) to ensure undue bias was mitigated.

Participants were not told the type of manipulation they were receiving. Further, the experiment materials were of similar length and formatting, and the experiment was conducted over a short period of time (four days). The different materiality threshold disclosures were not overly emphasised to avoid demand effects. While there lies a risk that participants may miss this key independent variable, the 94 percent correct response over materiality disclosure reduces any concern and supports internal reliability.

To ensure this study was appropriately concise, ensuring undergraduate students had enough time to complete and comprehend the experiment, the research design has forfeited some validity (reliability) questions – i.e. different questions (minimum of three) tapping the same key theme, which can be statistically analysed using methods such as Cronbach's Alpha. Instead, this study has adopted inversely related validity checks where the use of Pearson's R bivariate tests can be used to determine construct validity. Bivariate tests are deemed appropriate given the two variable testing performed. ANOVA tests over participants' confidence in the study have also been utilised.

There are four key validity checks which have been performed over the two hypotheses (H1 and H2) and then over the concept of perceived investment risk, which ties the two together. Descriptive statistics for the relevant variables are as follows:

**Table 2 – Descriptive Statistics**

<b>Control (N=17)</b>			<b>5% Materiality Disclosure (N=17)</b>		<b>10% Materiality Disclosure (N=15)</b>	
Variables	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
<b>Investment Decision</b>	5.29	1.45	5.82	1.29	3.47	1.31
<b>Perceived Audit Quality</b>	5.18	1.38	5.29	0.82	5.07	1.18
<b>Perceived Risk</b>	4.53	0.98	3.47	1.14	3.80	0.91
<b>Financial Risk- Taker Disposition</b>	4.12	1.18	4.76	0.88	3.87	1.67
<b>Decision Confidence</b>	4.24	1.21	5.18	0.86	4.53	1.46
<b>Perceived experience with financial statements</b>	3.88	1.37	3.82	0.98	3.47	1.02
<b>Perceived experience with audit reports</b>	3.12	1.45	2.88	1.13	2.47	1.36

Notes:

Investment decision end points, 1=\$0 shares & \$7,000 bonds, 8=\$7,000 shares & \$1,000 bonds.

Perceived audit quality end points, 1=very unreliable, 7=very reliable.

Perceived risk endpoints, 1=very low risk, 7=very high risk

Financial risk-taker disposition, 1=strongly disagree, 7=strongly agree

Decision confidence end points, 1=no confidence, 7=very confident

### *7.1.3.1 Investment decision*

The dependent variable relating to the investment decision (H1) is expected to be closely and inversely related to investment risk – i.e. with a larger investment decision response (greater investment in shares), I would expect a lower perceived risk of the investment. This would hold true for each of the independent variables, as irrespective of the ultimate investment

decision, this should correspond to a linear impact on the perceived risk of the investment. To test for this, a bivariate Pearson's R test is used, using descriptive statistics per Table 2:

**Table 3** – *Pearson's R test between investment decision and perceived investment risk*

	R-value	
Control	0.140	**
5% Disclosure	-0.182	***
10% Disclosure	-0.649	

Notes:

\*, \*\*, \*\*\* indicate significance (one tailed t-test) at 10 percent, 5 percent, and 1 percent levels.

From the analysis in table 3, the independent control variable exhibits a significant (p-value < 0.05) positive correlation, indicating that perceived risk of the investment did not drive the investment decision, as was expected.

However, the five percent disclosure evidenced a minor significant (p-value < 0.01) negative correlation and the ten percent disclosure indicated a lack of statistical significance.

Overall, it is not clear whether the perceived risk of the investment drove the investment decision, limiting the conclusions that can be drawn. Further analysis is performed below.

It is expected that with a higher investment in shares, the participant would identify themselves as being less risk averse (on the basis that if the participant were risk averse, they would switch their investment away from the shares and into the risk-free NZ Government Bonds, all else equal). Therefore, it is expected that a positive relationship between the investment decision and level of risk-taker disposition would result. To test this, a bivariate Pearson's R test is used using descriptive statistics per Table 2:

**Table 4** – *Pearson’s R test between investment decision and risk-taker disposition*

	R-value	
Control	0.496	***
5% Disclosure	0.223	***
10% Disclosure	0.029	

Notes:  
\*, \*\*, \*\*\* indicate significance (one tailed t-test) at 10 percent, 5 percent, and 1 percent levels.

As can be seen, there is a significant ( $p\text{-value} < 0.01$ ) low to moderate positive relationship in the control and five percent independent variables. However, an insignificant result when the materiality threshold disclosure is ten percent of net profit before tax. Importantly, this provides support for the reliability of the study given the significant results identified for the control and five percent materiality threshold disclosure.

#### *7.1.3.2 Perceived audit quality*

The dependent variable (H2) relating to audit quality is expected to be closely and inversely related to the question on investment risk – i.e. with a greater perceived investment risk, the quality of the audited values is expected to decrease. This is consistent with arguments made as part of the hypotheses development (refer to chapter 5). Further, where participants identify the audited values as unreliable, the investment decision risk should increase. A Pearson’s R bivariate test is used using descriptive statistics per Table 2:

**Table 5** – Pearson’s R test between audit quality and perceived investment risk

	R-value	
Control	0.192	*
5% Disclosure	-0.522	***
10% Disclosure	-0.484	***

Notes:  
\*, \*\*, \*\*\* indicate significance (one tailed t-test) at 10 percent, 5 percent, and 1 percent levels.

From table 5, there is a significant and moderate negative correlation for all three variables stated. Therefore, when investment risk is perceived to be high, this correlates with a low perception of audit quality. This result is expected and due to the statistical significance, supports the reliability of the study.

#### 7.1.3.3 Investment decision and perceived audit quality

Based on the two hypotheses formulated (H1 & H2) per chapter 5, I would expect that the two dependent variables would move in a positive relationship (i.e. a higher investment in shares of the hypothetical entity would also result in a higher perceived audit quality). To test for this, a bivariate Pearson’s R test is used using descriptive statistics per Table 2:

**Table 6** – Pearson’s R test between investment decision and perceived audit quality

	R-value	
Control	-0.232	
5% Disclosure	0.049	*
10% Disclosure	0.368	***

Notes:  
\*, \*\*, \*\*\* indicate significance (one tailed t-test) at 10 percent, 5 percent, and 1 percent levels.

Table 6 identifies that it is statistically significant that a low to moderate positive relationship exists for the five (p-value < 0.1) and ten percent (p-value < 0.01) materiality disclosures, when correlating the investment decision with the perceived audit quality. Further, there is not a statistically significant correlation for the control disclosure. This therefore supports the reliability of this study.

#### *7.1.3.4 Financial risk-taker*

To ensure that investment risk is appropriately considered in the four tests above, a separate bivariate Pearson's R test has been completed over the belief that the participant is a financial risk-taker and the perceived risk in the investment. The general belief is that where the participant identifies as a high financial risk-taker, they are more likely to perceive a lower risk in the investment in shares, over the risk-free NZ Government Bonds. To test for this, a bivariate Pearson's R test is used using descriptive statistics per Table 2:

***Table 7 – Pearson's R test between risk-taker disposition and perceived investment risk***

	R-value	
Control	0.099	
5% Disclosure	-0.300	***
10% Disclosure	0.150	

Notes:

\*, \*\*, \*\*\* indicate significance (one tailed t-test) at 10 percent, 5 percent, and 1 percent levels.

From table 7, there is an insignificant correlation for the control and ten percent independent variables. However, a significant (p-value < 0.01) and moderate inverse relationship in the five percent disclosure which is consistent expectations. On this basis, it is somewhat likely that the concept of risk was understood by participants.



#### *7.1.3.5 Summary of Pearson's R tests*

Overall it can be summarised that the Pearson's R tests support the reliability of this study and therefore provide comfort over the subsequent conclusions drawn and generalisations made (refer chapter 8). However, there are a few correlations identified above which are not inline with what is expected and this does provide some limitation.

Future studies would benefit from larger sample sizes or additional experiment questions tailored around a similar concept. This would enable greater analysis to be performed, along with alternate statistics used such as Cronbach's Alpha.

#### *7.1.3.6 Confidence level*

Experiment reliability is also driven by the confidence level that participants place in the study. This is based on the study by Hirst et al. (1999).

As can be seen from the descriptive statistics per Table 2, the mean confidence level in the decision was greater than 'neutral' and towards 'somewhat confident' for the control and ten percent disclosure. For those who answered the five percent disclosure, this was a strong 'somewhat confident' mean response. This low to medium response is expected of undergraduate students, given their more limited understanding of investing in general. Using ANOVA analysis over the mean difference between groups (in relation to perceived confidence level), the F-Score is 2.773 and the confidence level  $P=0.073$  is derived.

Importantly, this is within the ten percent benchmark for significance. On this basis, the results suggest that participants were generally on the side of 'somewhat confident' in their decision which supports the internal reliability. Of particular mention, is that this question

covers the investment decision (H1) and not the perception of audit quality (H2), limiting the scope of this question.

#### *7.1.3.6 Conclusion – construct validity and reliability*

Overall, it can be concluded that the study has sufficient construct validity and reliability. Furthermore, 78 percent of participants indicated that they had an intention to purchase shares in the future. Therefore, it can be assumed that the participants were interested in the study (in terms of the investing decision). Further, with only 14 percent of participants indicating they had purchased shares previously, the insignificant Pearson's R results in some categories are somewhat expected.

## **7.2 Investment Decision**

This research has utilised both a univariate analysis of variance (ANOVA) to test the H1 hypothesis, along with bivariate t-tests to examine differences between the mean scores of each group.

To reject the null hypothesis relating to the investment decision, an ANOVA statistical test has been used in line with the descriptive statistics provided in Table 2. From this, an F-score of 12.998 with a  $P=0.000$  is derived suggesting significant differences (within  $p\text{-value} < 0.1$ ) between groups. This suggests the rejection of the null hypothesis, where an increase in materiality threshold disclosure relates to a corresponding decrease in the investment in the hypothetical company.

To further break down the impact, and to determine the extent to which the null hypothesis (H1) can be rejected, additional bivariate t-tests have been performed – see table 8.

**Table 8** - T-test ( $p\text{-value} < 0.1$ ) of differences in groups investment – H1 (bold is not-significant at  $p\text{-value}$ )

Groups	T-value	P-value
Control – 5% Disclosure	<b>-1.091</b>	<b>0.283</b>
Control – 10% Disclosure	3.610	0.001
5% Disclosure – 10% Disclosure	4.950	0.00002

As shown in table 8, there is a significant difference in the mean for the control variable and the ten percent materiality threshold disclosure, along with the five percent and ten percent materiality threshold disclosure groups. Alternatively, there is no significant differences in means between groups for the control and five percent materiality threshold disclosure. Therefore, the results suggest a partial rejection the null hypothesis ( $H1_0$ ), based on the ten percent materiality, and not the five percent, materiality threshold disclosure.

In an un-tabulated one-way ANCOVA for two independent means, audit report experience is used as a covariate for the control and five percent materiality threshold disclosure to determine whether this impacts the investment decision. This is based on the descriptive statistics provided in Table 2. From the analysis performed, when controlling for participants' audit report experience, there remains no mean difference between groups relating to investment decision when a five percent materiality threshold is disclosed, due to statistical insignificance ( $F\text{-value}=1.22$ ,  $p\text{-value}=0.277$ ). This effect is consistent when financial statement experience is used as a covariate ( $F\text{-value}=1.38$ ,  $p\text{-value}=0.249$ ).

### 7.3 Perceived Audit Quality

This research has utilised both a univariate analysis of variance (ANOVA) to test the H2 hypothesis, along with bivariate t-tests to examine differences between the mean scores of each group.

In order to test the null hypothesis ( $H_{20}$ ) relating to the perception of audit risk, an ANOVA statistical test has been used in line with the descriptive statistics provided in Table 2. The ANOVA test F-score is 0.146 and  $P=.864$ . On this basis, the results suggest the failure to reject the null hypothesis which suggests that increasing auditor materiality threshold disclosure does not lead to a decrease in perceived audit quality.

The t-tests performed over this tells a similar story (as is expected given the ANOVA result) when considering a bivariate analysis over each of the different independent variables:

**Table 9** - *T-test ( $p$ -value < 0.1) of differences between groups perceived audit quality – H2*  
(*bold is not-significant at  $p$ -value*)

Groups	T-value	P-value
Control – 5% Disclosure	<b>-0.293</b>	<b>0.772</b>
Control – 10% Disclosure	<b>0.232</b>	<b>0.818</b>
5% Disclosure – 10% Disclosure	<b>0.617</b>	<b>0.542</b>

In an un-tabulated one-way ANCOVA for three independent means, audit report experience is used as a covariate for materiality threshold disclosure and perception of audit quality. This is based on the descriptive statistics provided in Table 2. From the analysis performed, when controlling for participants' audit report experience, there remains no mean difference

between groups relating to materiality threshold disclosure and the perceived audit quality, due to statistical insignificance (F-value=0.15, p-value=0.861). This effect is consistent when financial statement experience is used as a covariate (F-value=0.12, p-value=0.887). Therefore, the results fail to reject the null hypothesis ( $H_{20}$ ), consistent with the ANOVA analysis.

Consideration are also given to using a MANOVA test analysis based on the relationship between perceived audit quality and the investment decision. However, with the statistically insignificant finding over perceived audit quality, this test would be somewhat redundant and has not been considered further.

## 7.4 Summary of Findings

From the statistical analysis performed, there are significant mean differences between the control and ten percent materiality threshold disclosure, and between the five percent and ten percent materiality threshold disclosure groups. This enables a partial rejection of the null hypothesis ( $H_{10}$ ). On this basis, there is statistically significant evidence that a materiality threshold disclosure of ten percent will result in a shift in investment from the relatively higher risk shares and into risk-free NZ Government Bonds. While the validity tests do suggest an element of caution in interpreting the findings, the result is significant and can be used to generalise to the population.

In contrast, no significant evidence of an impact is identified for the effect of materiality threshold disclosure and perceptions of audit quality consequently, the results completely fail to reject the null hypothesis ( $H_{20}$ ). On this basis, there is no statistical evidence to suggest that an increase in materiality threshold disclosure, would reduce the perception of audit quality.

## 8. DISCUSSION

### 8.1 Purpose

The purpose of this study is to determine whether an increase in materiality threshold disclosure would decrease first, the level of investment in a hypothetical entity (H1) and second, the perceived audit quality (H2).

The discussion of the statistical results performed has been split based on these two hypotheses.

### 8.2 Investment Decision

#### *8.2.1 Overall results*

From the analysis performed, it is possible to partially reject the null hypothesis (H1). It is identified that from the five percent and ten percent materiality threshold disclosures, the only significant effect identified (at a significant p-value  $< 0.001$ ) is when the materiality threshold is ten percent of net profit before tax. Due to this mean significant difference between groups, when the materiality threshold is disclosed at ten percent of profit before tax, investment in the hypothetical entity will reduce, in favour of an increased investment in risk-free NZ Government Bonds. This occurs when the means between groups are compared to the no disclosure and five percent threshold disclosure groups. Further, the Pearson's R tests performed (refer to chapter 7.1.3.4) indicate that this is low-moderately likely due to the perceived higher risk in the share investment.

Conversely, this research identifies that with a five percent materiality threshold disclosure, there is no change between groups in the mean investment in shares in the hypothetical

company, in favour of risk-free NZ Government Bonds. This is due to lack of statistical significance (at  $p\text{-value} < 0.1$ ). When financial statement audit report experience are incorporated as covariates, this statistical insignificance remains (at  $p\text{-value} < 0.1$ ).

This result is consistent with other studies, where statistically significant changes in behaviour, as a result of a ten percent materiality disclosure, are identified (Davis, 2007; Doxey, 2013; Ruhnke et al., 2014). However, in contrast to these studies, this research identifies a lack of statistical significance when the materiality threshold disclosure is five percent of net profit before tax.

#### *8.2.2 Five percent materiality threshold disclosure*

One possible reason for the absence in statistical significance at the five percent threshold disclosure is that participants may have misunderstood the concept of materiality. However, this appears unlikely from the manipulation testing performed (refer chapter 7.1). Further, the research experiment included two control variables to test user's understanding of materiality, and how this would impact an audit report. First, the experiment asked what type of misstatements auditors are concerned with (82 percent answered this correctly) and second, participants were asked what impact a material misstatement would have on the audit report (65 percent answered this correctly). The question relating to misstatements was answered correctly by the majority of participants. Further, the second question regarding misstatements and its impact on audit reporting was answered moderately correctly. Due to these results, the level of understanding by these undergraduate studies is considered reasonably high, indicating the participants had likely understood the concept of materiality.

The level of understanding of materiality (by the participants) is not consistent with the qualitative based studies of Houghton et al. (2011) and Gray et al. (2011). Through face to face interviews, Houghton et al. (2011) (and supported by Gray et al. (2011)) identify that different financial statement user groups perceive problems with understanding materiality. However, this research suggests that this may not be the case, with the questions on materiality, and its impact on audit reporting, being answered correctly by a large proportion of the participants. Future studies would benefit from exploring this finding further, along with deriving more statistical significance from the results.

Another possible reason for the lack of statistical significance at the five percent threshold disclosure, in line with the investor risk theory, is that the participants did not identify the materiality threshold disclosure as increasing risk. In other words, participants do not perceive that a five percent materiality threshold disclosure is material, meaning the mean investment did not change (due to lack of statistical significance). Importantly, this suggests that the materiality threshold perceptions of the participants (proxies for non-professional investors) are aligned, and therefore the audit expectations gap is not negatively impacted. The lack of statistical significance limits these conclusions drawn.

### *8.2.3 Ten percent materiality threshold disclosure*

It is likely that the ten percent materiality disclosure did not conform to the expectations of participants, where they identified the ten percent threshold disclosure as being material. Due to this, greater risk is perceived, and the investment in shares shifted to the risk-free NZ Government Bonds. This is consistent with the findings by Doxey (2013) who argues that the decisions of users and auditors (regarding materiality) do not match well. Further, this indicates that participants are penalising the hypothetical company through less investment,



as a result of a ten percent materiality threshold disclosure. On this basis, this supports the existence of the audit expectations gap (Porter, 1993). Further, this finding supports other research which suggests that auditor materiality threshold judgements are higher than that of financial statement users (Firth, 1979; Jennings et al., 1987).

Auditors will utilise higher materiality thresholds when their risk assessment of an entity identifies a lower potential for a risk of material misstatement. This is consistent with the auditing standards which identify audit risk as being a function of misstatement (ISA (NZ) 320, 2011-Section A1). On this basis, with lower audit risk, the auditor will identify a lower risk of misstatement and the resulting materiality will increase (as less audit work is required to reduce this perceived lower risk to an acceptably low level). The results of this study suggest that participants do not agree with this assessment when the materiality threshold is disclosed at ten percent (due to the shift in investment into risk-free NZ Government Bonds). On this basis, the results further support the existence of the audit expectation gap. Additionally, the results suggest that including materiality threshold disclosure at ten percent of net profit before tax will increase the audit expectations gap. This finding is inconsistent with other research which supports materiality disclosure (Litjens et al., 2013).

It is acknowledged that the statistically significant reduction in investment in shares, as a result of the ten percent materiality threshold disclosure, may also be explained by other factors which are not directly tested within this study (as described in chapter 6.2, this was to reduce the information overload on the undergraduate students). For instance, it is possible that the additional disclosures are seen by participants as auditors passing on their responsibility (similar to impacts identified by R. Fisher (1993)). Therefore, added investment risk is identified by the participants which leads to a reduction share investment, in favour of risk-free NZ Government Bonds. However, this may be unlikely due to the failure to reject the  $H_{20}$  null hypothesis. On this basis, it is likely that the participants do not

blame the auditor for materiality threshold disclosure (i.e. do not identify that auditors are passing on their responsibility), in contrast to the findings of R. Fisher (1993). However, due to lack of statistical significance, these findings are limited.

Appropriately functioning capital markets rely on having sufficient and up to date information. Due to the results of this study, it is likely that materiality threshold disclosures should form part of this information (on the basis that investment decisions did change as a result of a ten percent materiality disclosure). This is consistent with the findings of M. Fisher (1990). As suggested, participants may not agree with the ten percent materiality threshold and hence this creates an expectations gap between participants and auditors. However as the purpose of an audit is to “enhance the degree of confidence of intended users...” (ISA (NZ) 200, 2016, p. 6), and as users within this study (i.e. non-professional proxy investors) are indicating they do not agree with the ten percent threshold disclosure, then it may be useful to disclose materiality. This is on the basis that if materiality were disclosed, this might force auditors to realign their materiality judgements in line with user’s expectations, therefore reducing the audit expectations gap. Alternatively, no disclosure will likely have no impact on how auditors determine materiality and as such, create no change to the audit expectations gap which has been shown to exist when materiality thresholds are ten percent of profit before tax.

Furthermore, it is possible that when materiality threshold disclosure occurs, financial statement users will anchor their materiality perceptions of the first adopters, onto subsequent adopters. This is the anchoring effect identified by Doxey (2013). Specifically, the first companies who disclose materiality thresholds may exhibit a reduction in trading of their shares (where a ten percent materiality threshold is used). However, investors are likely to anchor their materiality threshold disclosure to these first adopters and apply it to subsequent

adopters. This would then lead to a minimal impact on share trading in the long run (as the materiality perceptions of financial statement users' and auditors' are now aligned).

#### *8.2.4 Summary*

The results of the statistically significant, ten percent materiality threshold disclosure, are important for the investing community and capital markets. When materiality thresholds are disclosed at ten percent of profit before tax, non-professional investors (which can be as much as 34 percent of the capital market (Holt & DeZoort, 2009)) are reducing their investment in shares, in favour of risk free NZ Government Bonds. This may have severe (albeit likely short-term) impacts on companies who rely on capital markets for future funding (such as start-ups or mature entities wishing to expand). In contrast, this may benefit Governments through increasing demand for their bonds.

Overall, while it is identified that initial investment decision impacts occur in the short-term (effectively, immediately), it is possible that the long run implications would be minimal (due to an anchoring effect). Therefore, the disclosure of materiality thresholds may be beneficial, on the basis that the disclosure of materiality thresholds may ensure materiality is more aligned between users of financial statements and auditors (reducing the audit expectations gap). It is on this basis that the disclosure of materiality is tentatively supported from the results of this study. However, further longitudinal studies required to verify the long run impacts of disclosure (on the audit expectations gap).

This tentative call for disclosure is important, given the companies and auditors already disclosing materiality thresholds in New Zealand (Contact Energy, 2017; Vodafone Group Plc, 2015; Z Energy, 2017). Further, it is consistent with the growing array of research which

also calls for the public disclosure of materiality (Davis, 2007; Houghton et al., 2011; Litjens et al., 2013).

To increase the statistical significance of the five percent disclosure, future studies should increase the participant sample size and potentially the types of participants (i.e. more advanced proxies for non-professional investors, such as MBA students). Further, the results within the research reliability testing performed (refer to chapter 7.1), where statistically significance was not identified in all instances, does limit the conclusions drawn.

### 8.3 Perceived Audit Quality

From the analysis conducted, this study fully rejects the null hypothesis (H2). The change in materiality threshold disclosure (at five and ten percent of net profit before tax) does not significantly ( $p\text{-value} < 0.1$ ) change the perceived audit quality. This statistical insignificance remains when financial statement and audit report experience are incorporated as covariates. The lack of significant impact on this variable was unexpected given the significant finding over investment decision and due to the moderately positive Pearson's R test performed over these two dependent variables (refer to chapter 7.1).

Consistent with chapter 8.2, it is identified that the participants have a moderate to strong understanding of materiality. As such, it is possible that the lack of mean difference between groups (due to lack of statistical significance) is caused by participants perceiving materiality choice as a regular part of the audit process, along with the fact that participants may not blame the auditors for the materiality disclosure. In other words, this could indicate that participants do not see their requirements as driving materiality, rather it is an auditor

decision, based on auditor requirements. This is in contrast with auditing standards (ISA (NZ) 320, 2011) and indicates a separate type of audit expectations gap issue.

Importantly, the lack of mean differences between groups (due to lack of statistical significance) is in contrast to previous studies. These studies suggest that stakeholders perceive materiality and assurance to be the same concept (Gray et al., 2011), along with materiality reflecting the confidence (i.e. quality) that can be placed in audit (Davis, 2007). Further, the results are in contrast to Gutierrez et al. (2015) who identifies that materiality threshold disclosure can positively impact audit quality. However, without statistical significance it is plausible that these studies are still valid.

Alternatively, the audit quality experiment question was posed in an indirect way (i.e. the question posed the reliability of the audited financial information, rather than the specific quality of the audit). On this basis, it is entirely possible that the participants simply read the unmodified audit opinion wording and did not pay particular attention to the impact of materiality – and hence no significant change in perceived audit quality was identified. This finding would also be consistent with Mock et al. (2009) who suggest that most audit report users simply identify whether the report is qualified, along with Gray et al. (2011) who identify that users would be happy with a stamp, rather than the boilerplate wording which is currently in use.

Future studies would benefit from larger samples sizes, along with including additional variables for audit quality to enhance the reliability of results obtained.

## 9. CONCLUSION

The aim of this research has been to investigate how the change in materiality threshold disclosure will impact on the investing decisions of non-professional investors, along with their related perceptions of audit quality. The first hypothesis (H1) suggests that with higher materiality thresholds disclosed, investors will perceive the investment as higher risk and therefore reduce their investment in shares, in favour of risk-free NZ Government Bonds. Consistent with this, the second hypothesis (H2) suggests that with higher auditor materiality thresholds disclosed, non-professional investors will perceive this as being consistent with lower audit quality.

First, the univariate and bivariate testing performed identifies that with a ten percent materiality threshold disclosure, the mean investment in the hypothetical entity will shift to lower risk NZ Government Bonds. This has serious implications for the market at large, suggesting that the materiality perceptions of non-professional investors and auditors have significant differences (i.e. supporting the evidence for an audit expectations gap (Porter, 1993)).

From prior research, it has been identified that it is likely that financial statement users will anchor future materiality threshold disclosures by later adopters, with those companies that have adopted early (whether by choice or regulation). On this basis, it is expected that long run materiality perceptions of both users of financial statements and auditors may align (i.e. the audit expectations gap may reduce (Doxey, 2013)).

Second, this study identifies no significant mean difference between the groups for when the materiality threshold is disclosed at five percent of profit before tax. It is suggested that this lack of mean difference (due to lack of statistical significance) may be due to participants not

perceiving the five percent materiality threshold as material. Therefore, this suggests the lack of an audit expectations gap, however due to lack of statistical significance, this finding is limited.

Third, the univariate testing performed identified that there is no statistically significant mean difference between the level of materiality disclosed and the perception of audit quality.

While it is likely that this could be driven by the limitations in research sample size and reliability, it is possible that participants simply identified materiality as a normal part of the audit process, and did not align the different materiality thresholds with different levels of assurance provided.

Finally, this research identifies the existence of the audit expectations gap when materiality thresholds are disclosed at ten percent of net profit before tax. This may result in a decision against the public disclosure of materiality thresholds. However, it is possible that with materiality threshold disclosure, auditors will identify that non-professional investors disagree with their materiality assessment (as they switch their investment from shares and into more risk-free assets). From this, and over time, auditors may better align their materiality thresholds with the perceptions of financial statement users. Alternatively, it is possible these perceptions of users may naturally align over time due to the anchoring effect Doxey (2013).

The disclosure of materiality thresholds may also have other positive benefits. For instance, the disclosure of materiality may help users of financial information make more appropriate comparisons between entities. This is supported by Firth (1979) and W. Messier et al. (2005) who suggest that meaningful comparisons cannot be made within and between companies without knowledge of the degree of misstatement.

Therefore, this research tentatively supports the disclosure of materiality thresholds in audit reports. However, before materiality thresholds are recommended to be disclosed, future studies are required to determine whether the long-term benefits of materiality disclosure (as discussed) are valid.



## **10. CONTRIBUTION TO KNOWLEDGE**

The findings of this study contribute to the limited, yet growing, research in the space of audit materiality disclosure and its impact on financial statement user decisions. Due to limited prior research, this study provides new insights and contributions to the impacts that audit materiality threshold disclosure will have on the decisions of non-professional investors. Specifically, that large (ten percent) materiality threshold disclosures will cause non-professional investors to reduce their investment in shares, in favour of risk-free investing instruments. Further, identifying that there is no mean difference in the investment decision where a small (five percent) materiality threshold disclosure is used, due to lack of statistical significance. In addition, this study has identified that non-professional investors perceive no mean difference in the perceived level of audit quality, also due to lack of statistical significance.

This research provides important insights into the continuing audit expectations gap debate and provides a solid foundation to drive future research on the disclosure of materiality thresholds and its impact on financial statement users. Furthermore, this study provides tentative support for auditor materiality threshold disclosure, however further longitudinal studies are needed.

Additionally, the preliminary focus of this research identified that not all lenders consider the audit report as part of their lending decisions. This can have far-reaching consequences regarding who the users of audit reports are and the information value they contain. Further research is needed in this area.

## 11. FUTURE RESEARCH AREAS

Due to the limited prior research in materiality threshold disclosure, there are many fruitful areas for further research. It is also possible that the new Key Audit Matter disclosures (and the materiality threshold disclosure that is being adopted by many New Zealand companies and auditors) could become the new frontier of audit expectations gap based research.

First, future studies would benefit from increasing the sample size and using improved proxies for non-professional investors. This would increase the participant's core understanding of investing and the purpose of an audit. Further, this can reduce some of the more basic definitions that were provided in the research design, for improved statements and summaries on company performance (which would increase the validity and realism of research design). Master of Business Administration (MBA) students would be best suited by this and is supported by various research including research on materiality disclosure (Doxey, 2013; W. B. Elliott, Hodge, Kennedy, & Pronk, 2007; Holt & DeZoort, 2009).

Second, as discussed in chapter 6.3, future research would benefit from exploring the third link of the audit report impact on decision-making as explained by Libby (1979).

Specifically, this study identified a significant mean change in investing decision from the ten percent materiality disclosure. Future research should explore the long-term impact (payoff) of this immediate investment decision reaction that was identified. This would also assist to determine the full extent of whether there are long-term benefits of public materiality threshold disclosure.

Third, while this study focused on the disclosure of materiality, the full suite of Key Audit Matter disclosures require comment around areas of significant audit risk and judgement (ISA (NZ) 701, 2015). It would be beneficial for future research to include all of the potential

Key Audit Matters with the materiality threshold disclosure, as this is what current New Zealand based companies are providing in practice (aiding realism of the study). However, to do this, significant assumptions and judgements will be required as every entity will have their own specific set of Key Audit Matters.

Fourth, while not required by the new auditing standards (ISA (NZ) 701, 2015), New Zealand companies and auditors have begun to include the disclosure of materiality thresholds in audit reports voluntarily. It would be useful to explore why this has occurred and why not all entities have disclosed. Further, it would be beneficial to research the long run trend of materiality threshold disclosure to determine whether this is a merely a trend or whether materiality threshold disclosure will remain.

Lastly, chapter 6.2 describes how this study first begun as research on the change in materiality threshold disclosure on a lending decision – similar to Ruhnke et al. (2014). Specifically, it is identified that the group of lenders who use audit reports may be smaller than expected (as evidenced by the lenders approached indicating they did not use audit reports in their lending decision). There would be significant benefits in a study that explores the true size of the audit report user base, which could indicate the relative importance of audit reports.

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## **13. APPENDIX – EXPERIMENT MATERIALS (FIVE PERCENT DISCLOSURE)**

Dear Participant:

You are invited to take part in a research study about how financial statement users are affected by audit report disclosures. Against a backdrop of the recent Global Financial Crisis, regulators such as New Zealand's Financial Markets Authority have recently instituted significant reforms in the area of **auditing and financial reporting**.

Your participation in this study will greatly enhance our understanding of these issues and may help to guide current and future reforms in this area. Your participation in this survey is entirely voluntary and you may exit the survey at any time with no penalty. All responses are entirely confidential and will remain anonymous. Further, all information collected, including prize draw emails, will be deleted/securely destroyed after the submission and publication of my thesis.

As a thank you for your participation, you may go in the draw to **WIN a \$200 Prezzy Card**. To enter the draw, please write your email address in the space provided at the end of this survey. This prize draw is entirely voluntary and you may complete the survey without participating in the prize draw.

This study should take approximately **fifteen minutes** to complete.

If you have any issues or comments regarding this study, please feel free to ask me any questions. My contact details are given below. Alternatively you may contact my supervisor, Associate Professor Richard Fisher (details below).

This research has received approval from the University of Canterbury Educational Research Human Ethics Committee. Any complaints may be reported to the Chair, Educational Research Human Ethics Committee, University of Canterbury, Private Bag 4800, Christchurch ([human-ethics@canterbury.ac.nz](mailto:human-ethics@canterbury.ac.nz)).

I thank you for your time in participating in this significant and timely experiment.

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## Format of Survey

*You are encouraged to take notes as you proceed through the survey.*

As you progress through this survey you will be:

- 1) – Provided with company background information for a hypothetical company;
- 2) – Provided with company audited financial statement extracts, pre-made ratios, and extracts from the **audit report**;
- 3) – Asked to make a hypothetical investment decision;
- 4) – Asked a series of additional questions; and
- 5) – Given the opportunity to go into the draw to win a \$200 Prezzy Card.



## Company Background

Please spend a few minutes reading this section

You are to assume that you are considering making an investment decision relating to NZ Building Suppliers Ltd, a fictional New Zealand Stock Exchange (NZX) listed company. More specifically, you are deciding on investing \$7,000 of your own funds into existing shares of NZ Building Suppliers Ltd for one year, and/or existing NZ Government Bonds paying 6% over one year. For the purposes of this experiment, you are to assume you have \$7,000 for this decision and you would not use the money for any other purpose.

NZ Government Bonds are commonly considered 'risk free', however they also generally earn a lower return than higher risk investments, such as shares.

When we buy a new bond we are lending funds to the government in return for the promise of receiving a certain fixed interest (coupon) rate. Government bonds can be traded in the market place before maturity. The value of bonds in the market will depend on how desirable their interest rate is at the time.

Returns from holding shares in listed companies generally comprise of dividend income periodically received from the company (i.e., the company distributes all or a portion of its profits/reserves back to investors) and capital gains/losses from fluctuations in share price.

NZ Building Suppliers Ltd is a manufacturer and supplier of various building supplies in the North Island of New Zealand. Although NZ Building Suppliers Ltd maintains a substantial market share in the North Island, a few large competitors exist, notably in the Auckland region. Despite the potential for growth due to the Christchurch rebuild, the management of NZ Building Suppliers Ltd are not planning on investing in Canterbury in the near future. This decision is based on strong competitive pressures from other manufacturers and suppliers in the region.

The management of NZ Building Suppliers Ltd expect sales and profits to remain stable over the next five years. Over this time, they will be focusing on strengthening the core business and repaying debt. The current share price of NZ Building Suppliers Ltd is \$6 per share.

NZ Building Suppliers Ltd have a dividend policy of paying out 60% of Net Profit after Tax every year. Consequently, the higher the Net Profit after Tax, the higher the dividends paid to shareholders (and vice versa). Dividends received are in proportion to the number of shares held.

NZ Building Suppliers Ltd is audited by a large registered audit firm. The audited financial statements and accompanying ratios (produced from the audited statements) are presented on the next page. An audit is designed to provide reasonable assurance (comfort) that the financial statements are free from material misstatement (error).

An audit will therefore impact on the quality of financial information presented which helps inform the share price and determine dividends paid.

## Financial Information:

NZ Building Suppliers Ltd Audited Income Statement Extract For the Year Ended 31st March, 2017			
	2017	2016	Movement %
Net Sales	4,887,392	4,443,986	10%
(Cost of Goods Sold)	(940,948)	(900,012)	5%
Gross Profit	3,946,444	3,543,974	11%
(Selling and Admin Expenses)	(292,965)	(218,291)	34%
All Other Revenue (Expenses)	(43,252)	(44,530)	-3%
Net profit before Tax	3,610,227	3,281,153	10%
Income Tax	(1,010,864)	(918,723)	10%
Net Profit after Tax	2,599,363	2,362,430	10%

NZ Building Suppliers Ltd Audited Balance Sheet Extract As at 31st March, 2017			
	2017	2016	Movement %
Total Current Assets	40,895,772	39,076,433	5%
Total Non-Current Assets	25,409,475	23,908,879	6%
Total Assets	66,305,247	62,985,312	5%
Total Current Liabilities	25,995,933	24,943,651	4%
Total Non-Current Liabilities	11,228,114	11,382,246	-1%
Total Liabilities	37,224,047	36,325,897	2%
Net Assets	29,081,200	26,659,415	9%
Total Equity	29,081,200	26,659,415	9%

Total Shares Outstanding	4,800,000	4,800,000
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NZ Building Suppliers Ltd Audited Financial Ratios			
	Industry Averages	2017	2016
Return on Assets	0.04	0.05	0.05
<i>Shows how effective management is at utilising its assets to generate revenue - relative to industry benchmarks</i>			
<u>Calculation - Net Profit before tax / Total Assets</u>			
Return on Equity	0.11	0.12	0.12
<i>Shows how much revenue is generated from equity currently invested in the company - relative to industry benchmarks</i>			
<u>Calculation - Net Profit before tax / Total Equity</u>			
Current Ratio	1.5	1.57	1.56
<i>Shows ability to met debts when they fall due - relative to industry benchmarks</i>			
<u>Calculation - Current Assets / Current Liabilities</u>			

## Preliminary Questions:

In regard to the 2017 financial performance of NZ Building Suppliers Ltd, did they:

- ☐ Report a Profit
- ☐ Report a Loss
- ☐ Break-even

Is your investment decision in either NZ Buildings Suppliers Ltd and/or NZ Government Bonds for a period of:

- ☐ One year
- ☐ Two years
- ☐ Greater than five years

Shares in NZ Building Suppliers Ltd earn return from both dividends and share price fluctuation (based on audited financial statements and other factors), whereas NZ Government Bonds earn 6% interest return over one year.

- ☐ True
- ☐ False

Shares generally hold a higher risk than NZ Government Bonds but can earn greater returns based on the outcome of audited financial information and other factors?

- ☐ True
- ☐ False

## Audit Report Extract

*Please spend a couple of minutes reading this extract*

### Extracts from the Audit Report

#### **Opinion:**

In our opinion, the accompanying financial statements, present fairly, in all material respects, the financial position of NZ Building Suppliers Ltd as at 31 March 2017, and its financial performance and cash flows for the year then ended in accordance with New Zealand Equivalents to International Financial Reporting Standards ('NZ IFRS') and International Financial Reporting Standards ('IFRS'). <sup>(1)</sup> See Footnote

#### **Materiality:**

A financial statement-related item is material if its omission or misstatement (error) could influence the decisions of financial statement users. As part of the audit process, a quantitative materiality threshold (a dollar figure) was determined for the financial statements as a whole based on our professional judgement. This threshold was used to assist us in identifying and evaluating material misstatements and in judging whether the financial statements as a whole were materially misstated. Items falling below the threshold were generally considered immaterial (in the absence of relevant qualitative considerations).

The materiality threshold therefore contributes to the basis for our audit opinion.

In this audit, a figure of **\$180,000** was determined as the **dollar materiality threshold** and was used in forming our audit opinion above. Uncorrected misstatements (either individually or in aggregate) below this threshold would not warrant a change in our unqualified (clean) audit opinion. In other words, a line item or other disclosure in the financial statements, such as net profit after tax, would need to be under or overstated by \$180,000 before we would consider revising our (clean) opinion.

(1) The opinion provided is considered a 'clean' audit opinion – no uncorrected errors were identified outside of the materiality threshold. 92

You are now asked to answer the following questions. Please read each question carefully and answer them as best you can.

### Investment Questions:

You are to assume that you have \$7,000 to invest in shares of NZ Building Suppliers Ltd and/or NZ Government Bonds for one year (investment term is one year).

The current share price of NZ Building Suppliers Ltd is \$6 per share and the current NZ Government Bond rate is 6% over one year. You may allocate any ratio of the \$7,000 between these two investments (the total invested must equal \$7,000), however you can only invest in \$1,000 allotments. You may assume no transaction costs.

Please indicate the amounts you would be willing to invest in each investment **by ticking ONE** of the following options:

**Please only tick one option:**

- ☐ \$0 in NZ Building Suppliers Ltd and \$7,000 in NZ Government Bonds
- ☐ \$1,000 in NZ Building Suppliers Ltd and \$6,000 in NZ Government Bonds
- ☐ \$2,000 in NZ Building Suppliers Ltd and \$5,000 in NZ Government Bonds
- ☐ \$3,000 in NZ Building Suppliers Ltd and \$4,000 in NZ Government Bonds
- ☐ \$4,000 in NZ Building Suppliers Ltd and \$3,000 in NZ Government Bonds
- ☐ \$5,000 in NZ Building Suppliers Ltd and \$2,000 in NZ Government Bonds
- ☐ \$6,000 in NZ Building Suppliers Ltd and \$1,000 in NZ Government Bonds
- ☐ \$7,000 in NZ Building Suppliers Ltd and \$0 in NZ Government Bonds

### Other Investment Related Questions:

In your opinion, what is the level of risk associated with investing in NZ Building Suppliers Ltd?

- ☐ Very Low Risk
- ☐ Low Risk
- ☐ Somewhat Low Risk
- ☐ Neutral
- ☐ Somewhat High Risk
- ☐ High Risk
- ☐ Very High Risk

In your opinion, do you believe that you are a financial risk taker?

- ☐ Strongly Disagree
- ☐ Disagree
- ☐ Somewhat Disagree
- ☐ Neither Agree nor Disagree
- ☐ Somewhat Agree
- ☐ Agree
- ☐ Strongly Agree

Overall, how confident are you in your previous decisions?

- ☐ No Confidence
- ☐ Low Confidence
- ☐ Somewhat Low Confidence
- ☐ Neutral
- ☐ Somewhat Confident
- ☐ Confident
- ☐ Very Confident

In your opinion, how reliable is the reported audited net profit after tax figure for NZ Building Suppliers Ltd?

- ☐ Very Unreliable
- ☐ Unreliable
- ☐ Somewhat Unreliable
- ☐ Neutral
- ☐ Somewhat Reliable
- ☐ Reliable
- ☐ Very Reliable

Indicate (in order of preference) the pieces of information which were most important to your decision of how much you invested in NZ Building Suppliers Ltd and/ or NZ Government Bonds (listing the number 1 shows this was the most important, and so on).

- \_\_\_\_\_ Company Background
- \_\_\_\_\_ Income Statement
- \_\_\_\_\_ Balance Sheet
- \_\_\_\_\_ Financial Ratios
- \_\_\_\_\_ Audit Report

In the audit report extract, what was the quantitative (dollar) threshold for materiality?

- ☐ No dollar amount was disclosed
- ☐ \$360,000
- ☐ \$180,000
- ☐ \$100,000

Generally auditors are more concerned with financial statement misstatements (errors) that are:

- ☐ Material
- ☐ Immaterial
- ☐ Either material or immaterial (no distinction between the two)

Where a misstatement in the financial statements is identified that is below the materiality dollar threshold (and where there are no other qualitative factors that indicate a material misstatement), would we still generally expect the audit opinion to be 'clean'?

- ☐ Yes
- ☐ No

## Demographic Questions:

What is your gender?

- ☐ Female
- ☐ Male

What is your expected Degree and Major?  
Please write down:

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What is your age?

- ☐ Under 18 years
- ☐ 18-19 years
- ☐ 20-21 years
- ☐ 21-22 years
- ☐ 22-23 years
- ☐ 23-24 years
- ☐ 25+ years

Please estimate the number of accounting courses that you have completed at University or High School.

- ☐ 0
- ☐ 1-2
- ☐ 3-4
- ☐ 5+

What is your highest level of education?

- ☐ High school level (e.g. NCEA)
- ☐ Bachelor's degree
- ☐ Postgraduate degree
- ☐ Other – please state



Please give an estimate of your experience with financial statements

- ☐ Very Inexperienced
- ☐ Inexperienced
- ☐ Somewhat Inexperienced
- ☐ Neutral
- ☐ Somewhat Experienced
- ☐ Experienced
- ☐ Very Experienced

Please give an estimate of your experience with audit reports

- ☐ Very Inexperienced
- ☐ Inexperienced
- ☐ Somewhat Inexperienced
- ☐ Neutral
- ☐ Somewhat Experienced
- ☐ Experienced
- ☐ Very Experienced

Have you ever bought or sold real company shares or debt securities (This excludes Kiwisaver investments)?

- ☐ Yes
- ☐ No

Do you plan on making any investments in the next five years? Note: this excludes Kiwisaver (or equivalent)

- ☐ Yes
- ☐ No

## End of Experiment

Thank you!

You have now completed the survey.

Your responses are appreciated and will be of great value to my research and the accounting profession.

Just as a reminder: all responses will remain anonymous and confidential. Further, all responses will be securely deleted upon the submission and publication of my research.

As a thank you for your participation you are encouraged to go into the draw to **win a \$200 Prezzy Card**. This prize draw is voluntary and you do not have to enter - your responses will still be counted if you choose not to enter.

Please add your email address below to enter the draw:

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